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WHICH DOWNED
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FLIGHT

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8-14 DECEMBER 2015

WORLD AIR FORCES

JUMPING UP THE CHARTS

How new models like Marines' F-35B
are maintaining global power balance



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COVER IMAGE

Selected to highlight our World Air Forces directory for 2016, the US Marine Corps' F-35B recently achieved initial operational capability status **P26**



BEHIND THE HEADLINES

Beth Stevenson attended a military airlift conference in Seville, where the German air force revealed plans to join a multinational group hoping to acquire a pooled fleet of Airbus A330 tankers **(P6)**



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Have you earned your stripes as a total aviation person? Find out for sure by playing Uncle Roger's seasonal quiz

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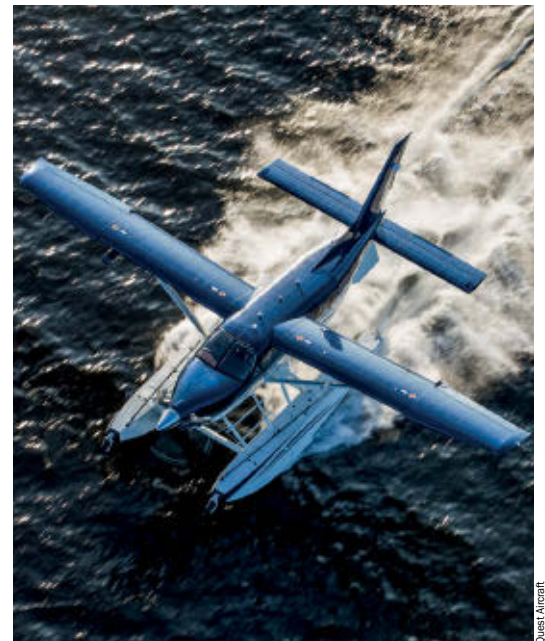
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IMAGE OF THE WEEK

American Airlines has unveiled an AirCal heritage livery on the final aircraft in a series showcasing colours of predecessor carriers – also including Reno Air and Trans World Airlines. The 737-800 sports a modified version of the livery AirCal introduced in 1981 before its merger with American in 1987

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American Airlines

THE WEEK IN NUMBERS

↑ **49%**

Flightglobal dashboard

Delta Air Lines' stakeholding in Aeromexico will rise to nearly half during H1 2016 – pending regulatory approval

\$556,000

Flightglobal dashboard

The amount owed in airport fees by privately-owned South African carrier Skywise, forcing it to cease operations

↑ **40**

Flightglobal dashboard

New four-year pilots deal at CommutAir will raise pay by up to 20%, and allow for the addition of 40 Embraer ERJ-145s

QUESTION OF THE WEEK

Last week, we asked: **With the RAF to get new maritime patrol aircraft:** You said:

72%

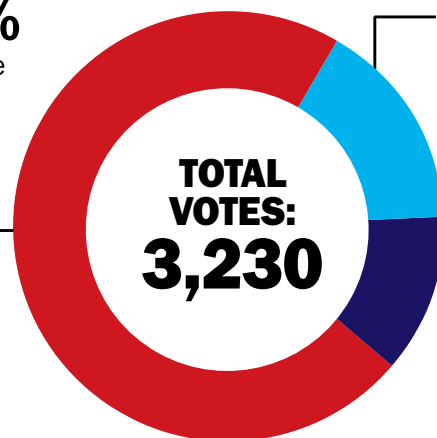
P-8 is the right choice

15%

Another nautical disaster looms

13%

UK solution would be better



This week, we ask: **Are airline pilots adequately trained to deal with high-altitude emergencies?** ☐ Yes, Indonesia AirAsia was an isolated incident ☐ No, a worrying pattern is emerging ☐ More research is needed before changes are made

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The Power of Flight

An upsetting discovery

The loss of the Indonesia AirAsia A320 in December 2014 raises profound questions about both pilot skills and their knowledge of the fundamental laws of physics that govern flight

This month marks the 150th anniversary of the birth of writer Rudyard Kipling, whose works included *The Secret of the Machines* – a discourse on modern technology which warned of fatal consequences if the operator made “a slip in handling us”.

Kipling did not pen his lines, of course, with the jet airliner in mind. But the relevance of his choice of phrase has not diminished.

The ill-advised decision by an Airbus A320 crew to reset flight computers, without appreciating the ramifications, and the pilots’ failure to cope with the subsequent in-flight upset, served to illustrate the absence of pity and forgiveness observed by his verse.

Loss of the aircraft to a high-altitude aerodynamic stall is not the most dispiriting aspect of the crash. More bewildering is that it occurred just five years after Air France AF447 – an accident which had left the airline community stunned that highly-trained and experienced pilots could have failed to recognise one of the most rudimentary upset conditions in aeronautics.

To misunderstand stalling is effectively to misunderstand the basic concept of lift

Pulling a circuit-breaker demands specific detailed system knowledge to comprehend the risk. Stalling, in contrast, does not. To misunderstand stalling is effectively to misunderstand the basic concept of lift and the role of the wing. In short, to misunderstand the most fundamental reason why an aircraft is able to fly.

Handling an aircraft at rarefied cruise altitudes requires care and finesse, and stable flight is a delicate balancing act normally entrusted to the flight-manage-



Dispiriting in every way

ment system and autopilot. Yet this environment in which pilots need a separate array of handling abilities is also the one in which they are least likely to gain hands-on experience.

The result is that pilots, used to operating the aircraft at low altitude, suddenly encounter different behaviour characteristics if they are forced to take over in cruise – when they are likely to be facing pressing matters as well as a possible degradation in flight-control laws and related envelope protections.

There is an old mantra for dealing with an in-flight crisis – aviate, navigate, communicate – but it relies on pilots having not only the skills to control the aircraft but sufficiently robust knowledge of the reasons for, and effects of, their application.

Critical moments after the discovery of an unexpected problem are no time for a lesson in aerodynamics. To operate a complex machine safely and effectively requires a prior understanding – as Kipling wrote – of the laws by which it lives. ■

See This Week P7, Air Transport P13

Boeing’s strategic loss

Aircraft production was officially waved into history at Boeing’s Long Beach site in Southern California on 29 November, as the company’s last ever C-17 took off, for final pre-delivery completion in Texas.

Some 74 years after Douglas established the site, workers watched the strategic transport leave, with no successor to follow it down the line. The plant’s fate had been sealed in 2013, when Boeing called time after anticipated orders from the US Air Force evaporated. A late flurry of small-unit orders from other users, such as final recipient Qatar, only kept the padlock from the gates for a few extra months.

What next for those air forces still needing to acquire an aircraft capable of transporting outsized cargo, such

as helicopters and large armoured vehicles? As luck would have it, at least two European nations have found themselves with a surplus of cutting-edge tactical transports which they are unable to afford. Once combined, Germany and Spain may be looking to offload 26 yet-to-be-built A400Ms, with the agreement of their partner nations and Airbus Defence & Space.

The European developer has endured a torrid 2015, with a fatal accident and ongoing discussions to revise its seven-nation production contract. But with its larger rival no longer on the scene, there seems little danger of work running out on its Seville final assembly line for many years to come. ■

See This Week P10, Defence P16



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BRIEFING

EMIRATES DEEPENS PACT WITH MALAYSIA AIRLINES

AGREEMENT Middle Eastern carrier Emirates is to codeshare with Malaysia Airlines (MAB) under a new pact that builds on their interline co-operation. Emirates will place its "EK" designator on domestic Malaysian routes, as well as services to several Asia-Pacific cities. In turn, Malaysia Airlines will be able to put its "MH" code on 38 Emirates destinations in Europe, another 38 in the Middle East and Africa, plus 15 across the Americas. Loss-making MAB has been restructuring its operations as part of a turnaround programme.

SPRING BOLSTERS FLEET WITH A320NEO DEAL

NARROWBODIES Spring Airlines has ordered 60 Airbus A320neo-family aircraft, in a deal valued at \$6.3 billion at list prices. The Chinese low-cost carrier says the order will be split between 45 A320neos and 15 A321neos. No engine selection has been given, and the order remains subject to approval by China's government. Deliveries are scheduled to run between 2019 and 2023.

RAF TORNADOS TAKE AIM INSIDE SYRIA

OPERATIONS The UK Royal Air Force commenced strike activities inside Syria with a mission involving six Panavia Tornado GR4s. Operated from RAF Akrotiri in Cyprus with support from an Airbus A330 Voyager tanker and a remotely-piloted General Atomics Aeronautical Systems MQ-9 Reaper, they struck targets at an Islamic State-held oilfield using Raytheon Systems Paveway IV precision-guided bombs. The UK parliament on 2 December approved the move to extend combat activities beyond Iraq.

FIRST ATR 72-600 HANDED OVER TO BAHAMASAIR

TURBOPROPS Bahamasair has taken delivery of its first of six new ATR 600-series turboprops, following an order at the Paris air show in June. With the arrival of aircraft MSN 1293, Bahamasair becomes a new ATR operator. The Bahamian flag carrier, which operates five de Havilland Canada Dash 8-300s and three Boeing 737-500s, placed a firm order for two ATR 72-600s and three ATR 42-600s.

737 DAMAGED IN MEXICO LANDING-GEAR COLLAPSE

INCIDENT Mexico City's international airport was forced to close a runway for 4h after a Boeing 737-300 suffered a landing-gear collapse after touchdown on 26 November. The accident involved Magnicharters service UJ779 from Cancún, and led to the closure of runway 05L/23R. The 27-year-old aircraft (XA-UNM) sustained a main-gear collapse as it landed, the operator says. None of the 139 passengers and five crew members was injured.

SIXTH SUCCESSFUL LAUNCH FOR VEGA LIGHT ROCKET

SPACEFLIGHT The European Space Agency's Vega light rocket has made its sixth successful launch, from Kourou, French Guiana. Following a 1h 45min flight, it placed its payload – the Airbus Defence & Space-built LISA Pathfinder – into an elliptic Earth orbit. LISA is designed to test high-precision measurement technologies that scientists hope will pave the way for the detection of predicted, but so-far undiscovered, gravitational waves.

GROWLER TO GET LONG-RANGE TARGETING UPDATE

AWARD The US Navy will modify its Boeing EA-18G Growler electronic-attack aircraft with the Rockwell Collins tactical targeting network technology datalink. The advance will help enable crews to identify vessels at long range without having to use the aircraft's radar.



The Luftwaffe has resolved to halt further investment in its A310s

PROCUREMENT BETH STEVENSON SEVILLE

A330 tanker pool gains new entrant

Germany makes common cause with Netherlands, Norway and Poland on task of operating multinational MRTT fleet

Germany has revealed plans to join the Multinational MRTT Fleet (MFF) alongside the Netherlands, Norway and Poland, to share a pool of Airbus Defence & Space A330 multirole tanker transports.

In 2014 the three other nations announced they would share the cost of operating the airliner-derived type in Europe, and now Germany has indicated that it too will join the effort.

"Germany has decided it has to stop any investment in the ageing A310 fleet," Col Ludger Bette, Wing Commander of the air force's Air Transport Wing 62, told SMI's Military Airlift and Rapid Reaction Operations conference in Seville on 1 December.

A feasibility study conducted by the service "concluded that the A330 is the favoured option", says Bette.

"Germany is currently an observer [of MFF] as of April this year, and we are planning to sign the MoU [memorandum of understanding] and contract in the second quarter of next year, with the option to procure three aircraft."

The nations involved are in the negotiation stage with Airbus re-

garding acquisition of the shared fleet, which had previously been touted as a buy of four of the type.

Germany is also in the process of acquiring the Airbus A400M. So far, one example has been delivered, with two more of the Europrop International TP400-D6-powered tactical transports to arrive by year-end. The country expects to have received a total of 40 of the type by 2019, says Bette, short of the 53-strong fleet initially envisaged.

"From my point of view, a decision needs to be made on this by 2018 at the latest," he notes. "What I know is that the German air force is looking for customers to sell these 13 aircraft to."

Delays to the A400M programme have also caused Berlin to reassess the planned retirement of its C160 Transall fleet. The out-of-service date has been pushed back from 2018 to 2021, and 24 of the aged type will be retained beyond that date in an electronic warfare configuration.

Nevertheless, obsolescence issues will make retention of the aircraft beyond 2018 expensive, Bette notes. ■

See World Air Forces P26



**Bluecopter
validates green
approach**
THIS WEEK P8

INVESTIGATION DAVID KAMINSKI-MORROW LONDON

Pilot actions doomed A320

Captain failed to take decisive control of stalled twinjet, NTSC accident report concludes

Investigators have revealed the captain of the Indonesia AirAsia Airbus A320 which crashed in the Java Sea last year failed to take decisive control of the aircraft as it stalled.

There was no input from the captain's side-stick during the initial upset to the aircraft, when it rolled 54° to the left while cruising at 32,000ft en route from Surabaya to Singapore.

Although the inquiry does not explicitly state that either pilot was out of his seat at the time, it points out that the roll coincided with flight-data recorder evidence that circuit-breakers were being reset to address a rudder travel limiter fault.

Some of these circuit-breakers, notably those which would affect the autopilot, could only be reached by a crew member if they left their seat. The inquiry notes that the captain of the aircraft had previously witnessed these circuit-breakers being reset to address a similar problem three days earlier.

Resetting the circuit-breakers resulted in the autopilot disengaging and the aircraft's sudden roll.

The first officer – who was flying – did not react to the unusual attitude for some 9s, but then sharply attempted to correct the roll with strong control inputs to the side-stick.

In doing so, he also pulled



A rudder travel limiter fault precipitated the fatal incident

backwards on the side-stick, pitching the A320 into a steep climb during which the airspeed bled away and the aircraft began to stall.

Flight-data recorder information shows there was almost no pitch or roll input from the captain's side-stick until after the stall alarm had sounded twice.

Cockpit-voice monitoring systems "did not record any command" declaring that the captain was taking over as the flying pilot, says the Indonesian National Transportation Safety Committee inquiry. But the conversations, it adds, appear to indicate that the captain "assumed the role" with no formal announcement.

"Without clear co-ordination on the role of [monitoring pilot

and flying pilot], this resulted in both crew members providing separate inputs to the flight-control system," it states.

Critically, the captain attempted to push the aircraft's nose down with forward pitch on his side-stick – the proper response to an aerodynamic stall.

The nose-down input was ineffective because the first officer was continuing to pull rearwards on his side-stick. These opposite actions cancelled one another out, because the Airbus flight-control logic acted on the sum of the two side-stick inputs.

The inquiry determined the captain did not properly activate the priority mechanism which would have given him exclusive control of the aircraft. ■

See Air Transport P13

DEVELOPMENT
STEPHEN TRIMBLE
WASHINGTON DC

Boeing's family planning pays off on 787-10

Boeing has cleared the 787-10 to transition from detailed design to the manufacturing and assembly stage ahead of schedule.

The third and largest member of the Dreamliner family has passed the detailed design milestone, allowing Boeing to release parts and tooling information to machinists and suppliers.

First flight is scheduled for 2017, followed by entry-into-service in 2018. The business case for the -10 emerged years after Boeing had the 787-8 and -9 on the drawing board. Boeing saw a need for an aircraft to serve high-density routes up to 6,430nm (11,900km).

The 787-10 was unveiled in 2013 with about 1,200nm less range than a -9, but the same maximum take-off weight and around 40 more passengers.

In addition to a common weight rating, the 787-10 shares 95% of parts with its smaller sibling. The airframer has even authorised a software change to the flight controls to avoid having to alter the size of the horizontal stabilisers, despite a 5.27m (18ft) stretch to the fuselage.

The aircraft is powered by 76,000lb-thrust (340kN) versions of the GE Aviation GENx-1B and Rolls-Royce Trent 1000.

The 787-10 has 164 firm orders from nine customers. ■



PROPULSION

First run for A330neo powerplant

Rolls-Royce has carried out the initial run of a demonstrator Trent 7000 engine, the powerplant which will be fitted to the Airbus A330neo.

The engine manufacturer says the powerplant "successfully completed" its first run on a testbed at the company's Derby headquarters.

It will be the exclusive engine for the A330-800neo and -900neo family, with a thrust rating of 68,000-72,000lb (302-320kN).

The engine is a successor to the Trent 700 for the current A330 line, but will feature architecture from the Trent 1000-TEN – built for the Boeing 787 – and technology from the Trent XWB for the A350.

Airbus is aiming to put the A330neo into service in late 2017.



ROTORCRAFT DOMINIC PERRY DONAUWÖRTH

Bluecopter validates green approach

EC-funded initiative ends having proved fuel-saving potential, but benefits of single-engine operation unable to be evaluated

Airbus Helicopters has ended test flights of its Bluecopter eco-demonstrator, after successfully validating a number of technologies to cut fuel burn by 12-15%.

However, trials of single engine operation (SEO) – which promised a further 25% improvement in fuel consumption – have been pushed into next year because of an unexpected level of complexity with the initiative.

The airframer unveiled the European Commission-backed programme in mid-2015. It took an early prototype of Airbus's EC135 light twin (D-HEEX) and added new features including enhanced rotor blades, a next-generation Fenestron shrouded tail rotor and an active rudder, all of which are designed to cut fuel consumption, carbon dioxide output and noise emissions.

But the biggest gains were

promised by SEO, or the ability to shut down one of the two engines in the cruise phase of flight.

However, programme director Marius Bebesel says adding control software to the avionics and FADEC engine systems proved "rather tricky".

"That is why we are a little bit delayed. We will probably continue these SEO measurements next year, but they will not be directly in the frame of the Bluecopter project," he says.

That programme effectively finishes at year-end, he says, with the demonstrator having amassed around 65 flight hours.

Instead, test flights are likely to resume in mid-2016 using the same airframe, but with the addition of the SEO system, alongside new engine side inlets and improved main rotors.

Any future tests of SEO will be



Dominic Perry/Flightglobal

Follow-up trials using the same airframe will resume in mid-2016

conducted in partnership with an engine manufacturer, says Bebesel. Although the Bluecopter demonstrator is powered by twin Pratt & Whitney Canada PW206 turboshafts, he says there was "no real co-operation" on the initiative with the firm.

"But the next step will be to go

for co-operation with Pratt & Whitney [Canada] or [alternative supplier] Turbomeca, or both on the topic," he says.

The main challenge will be to define with operators what level of complexity they require, particularly around restart of the shut-down engine, he says. ■



PROGRAMME

Maiden sortie for first TAM A350

TAM's first Airbus A350-900 has performed its maiden flight from the manufacturer's Toulouse site, ahead of its delivery to the airline later this month.

The twinjet will now enter the final production phase, which includes further ground checks and flight tests, says Airbus.

TAM will be the first operator of the A350 in the Americas. It holds orders for 27 of the type, with six of these converted earlier this year from the -900 to the larger -1000 variant.

The Brazilian carrier will begin operating the aircraft between São Paulo and Manaus in January, followed by international flights from São Paulo to Madrid, Miami and Orlando.

INVESTIGATION ELLIS TAYLOR SINGAPORE

Data review narrows the search area for MH370

Australia has further refined the search area for a missing Malaysia Airlines Boeing 777-200ER following a major review of data around ill-fated flight MH370, which went missing over the southern Indian Ocean on 8 March 2014.

The Australian Transport Safety Bureau (ATSB) says that the Defence Science and Technology Group (DSTG) has conducted a major review of the data available on the flight to calculate its likely path and refine the search area.

The DSTG was able to build a model of the final flight based on the available information, which was calibrated using satellite data and flight data from previous 777 operations. It also conducted 60 validation experiments to ensure its predictions aligned with real-world experience.

Applying a probability theory, it defined the likely final location as along a 378nm (700km) arc in the southern Indian Ocean, with the search to extend 20nm either side. The area of highest probability is in the centre of the arc.

The latest update also details the likely sequence of events as the aircraft neared the end of its flight, based on separate analyses by the DSTG and Boeing that were "in general agreement".

The ATSB believes the 777's starboard engine flamed out first, with the port-side Rolls-Royce Trent 800 powerplant following some 15min later. It says the evidence is "inconsistent with a controlled ditching scenario".

Registered as 9M-MRO, the 777 went missing en route from Kuala Lumpur to Beijing with 227 passengers and 12 crew on board. ■

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MANUFACTURING STEPHEN TRIMBLE WASHINGTON DC

C-17 departure is end for Long Beach

After 74 years of operation, Boeing facility in Southern California bids farewell to final aircraft, ahead of delivery to Qatar

Boeing officially marked the end of aircraft production at a 74-year-old plant in Long Beach, California on 29 November, flying the last C-17 out of the factory complex on Lakewood Boulevard.

The strategic transport was flown to a Boeing facility, in San Antonio, Texas, ahead of its scheduled delivery to the Qatar Emiri Air Force early next year.

Boeing vice-president and C-17 programme manager Nan Bouchard called the event “truly the end of an era”.

The fate of the Long Beach

plant was sealed two years ago, when Boeing announced plans to end C-17 production. The factory was opened by Douglas on the eve of the Second World War and shipped more than 30,000 military aircraft within four years.

The plant symbolised the growth and decline of a once-thriving aerospace manufacturing cluster in Southern California. Boeing ceased commercial aircraft manufacturing in Long Beach in 2004, after the acquisition of McDonnell Douglas in 1997.

Boeing continued building C-17s for more than a decade, de-



Strategic airlifter's take-off marked “truly the end of an era”

spite losing US Air Force orders for new aircraft after 2011 and handing over its last example to the service in September 2013. Its proposal for a next-generation B-model failed to attract backing, and the company ended internationally-driven production by completing “white tail” examples, which it sold to operators including Australia, Canada, Qatar – which is doubling its fleet of the type to eight aircraft – and the United Arab Emirates.

Flightglobal's Fleets Analyzer database records 269 C-17s in active use, including 222 with the USAF. Other users include the air forces of India, Kuwait and the UK, plus a consortium of NATO and Partnership for Peace nations, operating three airlifters.

More than 16,000 Boeing employees still work in Southern California, mainly in commercial aviation engineering and satellite manufacturing. ■

See World Air Forces P26

BOEING C-17 USERS

| Operator | Active | Ordered |
|-------------------------------------|------------|----------|
| US Air Force | 222 | |
| Indian air force | 10 | |
| Royal Australian Air Force | 8 | |
| UK Royal Air Force | 8 | |
| United Arab Emirates air force | 7 | 1 |
| Royal Canadian Air Force | 5 | |
| Qatar Emiri Air Force | 4 | 4 |
| NATO (Strategic Airlift Consortium) | 3 | |
| Kuwait air force | 2 | |
| Total | 269 | 5 |

SOURCE: Flightglobal's Fleets Analyzer database

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New lease of life
to keep Delta's
757-200s flying

The lack of a suitable replacement for the Boeing 757-200 is the driving force behind Delta Air Lines' decisions to extend the life of 14 of the type in its fleet and acquire five from Shanghai Airlines.

"Nothing really replaces it," said Ed Lohr, managing director of fleet planning at the Atlanta carrier, speaking at the Ascend West Coast Finance Forum in San Francisco in late November.

Delta bought five used 757-200s from Shanghai Airlines in the first quarter of 2015. These were some of the last off the 757 line, which Boeing shut in 2004. Lohr says the Shanghai twinjets are the eight-door variant, and a good fit with Delta's fleet of transatlantic and premium trans-continental 757s.

Neither Airbus nor Boeing offers a comparable long-distance aircraft. Airbus is attempting to enter the market with an extended-range A321neo. However, some airlines are sceptical of its performance compared with the 757. Boeing offers the 737-900ER and 737 Max 9 as replacements for the 757-200 on shorter routes.

Delta recently extended the lives of 14 757-200s it planned to remove in 2016 after the cancellation of a tentative order for 40 737-900ERs after pilots rejected a labour agreement in July. ■

NEGOTIATIONS DAVID KAMINSKI-MORROW LONDON

Cargolux eases labour pain

Freight operator positive after recent talks, but unions yet to recognise "acceptable solution"

Luxembourg freight operator Cargolux is claiming a preliminary agreement with unions over a new labour pact, potentially fending off the threat of industrial action.

Cargolux had faced the possibility of disruption from cockpit crew representatives over job security and the use of outsourcing in the carrier's expansion plans.

But the airline claims it has made a "major breakthrough" with the LCGB and OGBL unions in its latest round of talks – which took place as collective labour agreements expired.

The LCGB union, however, is wary and has yet to show the same enthusiasm as the airline over the results of talks. It acknowledges that the negotiations have "brought new movement" to the discussions, and says the airline and the unions will continue to talk with a view to finding an "acceptable solution" for all parties.

Cargolux insists talks have resulted in a principle agreement with the unions on labour terms which, it says, will lay a path to growth and financial sustainability. The terms are a "strong signal" of the carrier's commitment to job security and the competitiveness of its Luxembourg hub.

Ahead of the latest round of



Luxembourg-based airline will recruit another 100 pilots in 2016

union talks, the airline had disclosed plans to acquire another three Boeing 747-400Fs next year, and embark on a pilot recruitment scheme.

The 747-400Fs will be used partly for replacement, and are set to be introduced to succeed a pair of 747-400BCFs.

Cargolux says the -400Fs will be equipped with the nose-visor door allowing front-loading capability on the aircraft.

It says the additional aircraft will result in a net expansion of its fleet to 26 747 freighters.

The airline has two Pratt &

Whitney-powered -400BCFs, converted airframes which are not fitted with the nose-door.

Cargolux says that its board has approved the recruitment of another 120 personnel next year, with the number including 100 new pilots in Luxembourg.

"With this measure, the company aims to improve the current roster situation, as well as the work-life balance among its crews," notes the freight operator. "Introduction of enhanced part-time and stand-by systems for its pilots further supports this goal." ■

DELIVERY AARON CHONG SINGAPORE

Chengdu receives first ARJ21 after eight-year wait

Comac has delivered the first ARJ21 regional jet to launch customer Chengdu Airlines – eight years behind schedule.

Aircraft MSN106 (B-3321) left Shanghai Dachang airport on 29 November on a 2h 48min flight to Chengdu Shuangliu airport, where it was welcomed by a traditional water cannon salute.

Comac says delivery is a major breakthrough for Chinese aviation, and demonstrates its ability

to complete design, testing, certification and delivery of commercial aircraft. The ARJ21 will be put into service in coming weeks on flights to cities including Beijing, Xian, Wuhan, Shenzhen and Shanghai. Chengdu Airlines has a further 29 on order.

Certificated in December 2014, the ARJ21 has been in development for 12 years, and has been plagued by delays. Deliveries were meant to begin in 2007. ■



The Chinese jet will start flying on domestic routes within weeks



SaudiGulf eyes
launch date
AIR TRANSPORT P14

SAFETY DAVID KAMINSKI-MORROW LONDON

AirAsia crash echoes AF447 disaster

Degradation of flight control laws preceded co-pilot's repeated nose-up commands prior to A320's fatal stall over Java Sea

Circumstances surrounding the stall of the ill-fated Indonesia AirAsia Airbus A320 over the Java Sea on 28 December 2014 bear similarities to those preceding the loss of Air France flight AF447 in 2009.

Both appear to have involved a sudden trigger event and degradation of flight-control laws, followed by nose-up commands, a rapid climb to high altitude, loss of airspeed and failure to recover from the subsequent stall.

Indonesian National Transportation Safety Committee (NTSC) investigators believe the A320's first officer – who was flying – was startled by an uncommanded roll of 54° left, and pulled backwards on his side-stick.

PITCHED UP

This pitched the aircraft to 9° nose-up, beyond the climb attitude needed to regain the aircraft's assigned cruise altitude of 32,000ft. Flight-data recorder information also shows the first officer, probably to counter the unexpected left roll, pushed his side-stick sharply to the right – resulting in a rapid right roll and possible spatial disorientation.

The inquiry suggests the first officer might then have “over-corrected” as a consequence of sensing an “excessive” right roll, and moved his side-stick to the left, pushing the aircraft again into a steep left bank, before correcting again to bring the wings close to level.

But while the first officer was wrestling with the roll, the aircraft was continuing to climb as a result of the earlier nose-up command. The A320's stall-warning system activated and, initially, the first officer pushed the side-stick forward – reducing the angle-of-attack and cancelling the warning. But just after the warning stopped, the flight-data recorder showed nose-up input to the first officer's side-stick. The aircraft pitched up again and began climbing at 11,000ft/min.



None of the 162 passengers and crew aboard the narrowbody survived the December 2014 incident

“[After] the first stall warning the right side-stick input was consistently backward”

NTSC INQUIRY REPORT

“[After] the first stall warning the right side-stick input was consistently backward,” says the inquiry. “This resulted in the aircraft continuously pitching up.”

This runs counter to the standard practice of commanding nose-down input during the onset of a stall, in order to lower the angle-of-attack.

Air France flight AF447 was lost after a pilot repeatedly applied nose-up commands after an unexpected incident involving loss of reliable airspeed data. The Airbus A330 climbed rapidly and stalled at around 38,000ft.

Although the captain repeatedly gave the command “pull down”, the inquiry says this

order was self-contradictory, and it resulted in greater rearward input to the first officer's side-stick. This exacerbated the A320's nose-up attitude and it eventually reached a maximum angle-of-attack of 48°.

Investigators additionally believe the flightcrew may not have recognised the aircraft had stalled because it was descending rapidly in a level attitude.

The NTSC points out that, as the aircraft fell through 29,000ft, its wings were level and its pitch was nearly zero.

The high descent rate meant that, despite the level attitude, the angle-of-attack was around 40° – which kept the aircraft aerodynamically stalled.

Investigators have concluded that cracked solder joints on a circuit board, prompting the failure of the rudder trim limiter around 30min after departure, were the trigger for the event.

Attempting to address a series of alarms caused by the incident, the crew appear to have resorted

to resetting the circuit breakers for the flight augmentation computers (FAC), “resulting in electrical interruption to the FACs”.

PROTECTION

This ultimately caused the twin-jet's fly-by-wire system to switch to alternate law, under which several flight envelope protections and autothrust were no longer available.

That then led to the rudder deflecting 2° to the left, which initiated the sharp roll that startled the co-pilot.

Maintenance records show the aircraft, a 2008-built example registered as PK-AXC, had developed 23 rudder travel limit system faults over the previous year caused by the same solder crack.

The CFM International CFM56-powered twinjet was operating as flight QZ8501 on a scheduled service from Surabaya to Singapore with 162 passengers and crew on board. ■

Additional reporting by Ellis Taylor in Singapore



TARGET

DAVID KAMINSKI-MORROW
JEDDAH

IATA chief in call for MENA airline safety progress

IATA has proposed a safety improvement target for Arab countries to reach the average benchmark of 68% compliance with ICAO standards within three years.

Director general Tony Tyler, speaking at the Arab Air Carriers Organization conference, said the Middle East and North Africa region had shown an “improving trend for some time” on safety.

Last year the jet hull-loss rate for the region was 0.63 per million sectors. Referring to the *One Thousand and One Nights* collection of Middle Eastern folk tales, Tyler suggested the region’s “top priority” should be an “accident-free” period of this length.

“It’s a big goal towards which we are making constant progress with evolving global standards and best practices,” he says.

While the region’s average rate of compliance with ICAO safety standards is 68%, some countries – such as the United Arab Emirates – have achieved much higher. “Why should passengers from other Arab states settle for anything less?” Tyler asks.

He says audited Arab states should aim to match the regional 68% average before 2019. ■



Airline will concentrate on domestic and regional routes, with ambition to take 25% market share

FLEET DAVID KAMINSKI-MORROW JEDDAH

SaudiGulf eyes launch date

Start-up will receive four new A320s this year, ahead of planned start of operations in 2016

Middle Eastern start-up carrier SaudiGulf Airlines has received its first Airbus A320 and is awaiting final approval to launch early next year.

The carrier is expecting three more A320s in December and aims to be operating a full schedule by the end of the first quarter of 2016.

SaudiGulf chief Samer Majali told *Flight International* during the Arab Air Carriers Organization conference in Jeddah that receiving the first aircraft was essential to completing the approval process with the kingdom’s General Authority of Civil Aviation. He says the final stages involve an aircraft inspection, evacuation drills and route proving. SaudiGulf is intending

to provide additional full-service competition on Saudi Arabian routes as one of the carriers created under a licensing scheme by the Saudi government.

The process has been drawn-out – a second licence was handed to Qatar Airways division Al Maha Airways, but the start-up effort for this has stalled.

Majali says SaudiGulf’s progress has been slow. “We were delayed because we’re a start-up,” he says. “In this part of the world it takes time.”

He points out that the carrier did not want to begin operating with leased older aircraft, opting instead to wait for new jets.

The airline will focus on domestic and regional operations. “If we start flying beyond the re-

gion, we run into the likes of Qatar Airways,” says Majali.

While he says SaudiGulf is not being obliged to operate specific sectors, it is required to provide 10-20% of the capacity on routes within its network.

SaudiGulf plans initially to serve three or four domestic routes from Dammam, as well as a Gulf Co-operation Council destination. It will spend time establishing itself as a high-quality operation before embarking on expansion with the arrival of Bombardier CSeries jets in 2017.

These will help to increase the route network and enable the airline to offer greater frequency. Within three years, says Majali, SaudiGulf could have 25% of the kingdom’s domestic market. ■

AIRLINE DAVID KAMINSKI-MORROW JEDDAH

Oman Air mulls dual-source long-haul fleet growth

Middle Eastern carrier Oman Air is considering whether to dual-source a further long-haul fleet expansion, to give it 25 widebodies beyond 2022.

Oman Air has 10 Airbus A330s and has just received the second of six Boeing 787-8s. Speaking to *Flight International* at the Arab Air Carriers Organization conference in Jeddah, chief executive Paul Gregorowitsch said the airline was looking at additional long-haul types.

Gregorowitsch says the Muscat-based carrier “would prefer” two

manufacturers, but has yet to decide whether to dual-source the expansion or stay with Boeing.

He says the airline has started discussions with Airbus.

Oman Air would consider the A330neo and the A350-900 – but not the -1000 – to enlarge the fleet and replace its A330s.

The airline could opt for additional 787s. Gregorowitsch says the 787-9 would be the focus, but the -10 would also be a candidate. He says the airline wants types with the range potential to reach countries including Australia. ■



Muscat-based airline has so far received two of six Boeing 787s



Madrid rows back on A400M
DEFENCE P16

PROPULSION DAVID KAMINSKI-MORROW LONDON

PD-14 powerplant on track for 2018

Russian manufacturer says new indigenous engine for Irkut MC-21 has made an untroubled start to testing programme

Russian engine developer Aviadvigatel is claiming a smooth start of flight-testing for its PD-14 powerplant.

The engine is intended to equip the Irkut MC-21 twinjet, and an initial example has been fitted to an Ilyushin Il-76LL test-

bed. Four flights have been carried out since the initial 40min maiden sortie, which took place on 3 November from the Gromov test institute near Moscow.

During the trials, a team located in Perm has used a telemetry system to analyse the engine's



Irkut has begun assembly of the first test article for the MC-21

performance and system parameters in real time.

There have been no unusual findings, the engine developer indicates. The initial results "confirm the declared characteristics and performance", it says.

Russian trade and industry minister Denis Manturov says the first data shows that the PD-14 is meeting expectations, and serial production of the engine is on course for 2018. This will enable it to be "synchronised" with serial manufacture of the MC-21.

Progress to flight-testing for the PD-14 follows ground tests of components, and the full-size engine, at organisations including

Aviadvigatel, powerplant research specialist TsIAM, and the Central Aerohydrodynamic Institute. The manufacturer says the 27,500-34,500lb-thrust (122-153kN) PD-14 family is the "most ambitious" engine programme for Russia in the last three decades. Manturov points out that the engine holds potential for use in other aircraft programmes, including heavy helicopters.

Aviadvigatel is developing the PD-14 as an alternative indigenous powerplant to the 28,000-31,000lb-thrust Pratt & Whitney PW1400G geared turbofan, which will also be available on the MC-21. ■

DEVELOPMENT

Fire protection system tests begin

Technodinamika has carried out initial tests of the fire-protection system for the Irkut MC-21. The Russian supplier says the test of the equipment, developed with Curtiss-Wright Controls, "fully confirmed" its declared capabilities.

System performance is "superior" to counterparts on the Russian market, the company says. The system is lightweight through the use of com-

posite materials and an optimised design, it adds. Technodinamika says the system has a lifetime of 80,000h, and has algorithms to protect against false-positive alerts.

While developed for the MC-21, the company says it could be used with the Sukhoi Superjet. The product's modular architecture means it also has the potential for installation on long-haul transports. ■



MANUFACTURING

MRJ gains lift from new wing factory

Mitsubishi Heavy Industries (MHI) has broken ground on a factory to make wings for the Mitsubishi Regional Jet (MRJ).

Located at MHI's Kobe Shipyard & Machinery Works, the 5,600m² (60,300ft²) site will manufacture the regional jet's wing skin and spars, as well as the centre wing, says Mitsubishi Aircraft. The facility will operate in parallel with an adjacent 25,400m² factory. MHI has indicated wing parts from Kobe will be transported to the Tobishima facility of subsidiary Nagoya Aerospace Systems Works for assembly.

The Pratt & Whitney PW1200G-powered MRJ made its first flight on 11 November, and the airframer has 18 months to complete testing and certification before it is due to deliver the first aircraft in the second quarter of 2017.

MHI is the majority owner of Mitsubishi Aircraft, holding a 65% stake.



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ROTORCRAFT

DOMINIC PERRY LONDON

Offsets the key to debate over Polish Caracal

Poland's newly-appointed defence minister, Antoni Macierewicz, has raised fresh doubts about Warsaw's proposed acquisition of 50 H225M rotorcraft from Airbus Helicopters.

The 11t Caracal was chosen by the nation's previous government in April 2015 for a tri-service requirement, and negotiations with Airbus had been progressing prior to the change of administration after October elections.

Speaking at a meeting of the parliamentary defence committee on 25 November, Macierewicz – a long-standing critic of the H225M selection – raised the prospect of re-opening the contest.

Airbus Helicopters had gained approval from Poland's defence ministry for the deal, with contract talks shifting to the ministry of economy to finalise offset details. Macierewicz says he will only approve the order if the latter element is compelling.

"The conditions of signing the contract are positive negotiations of the offset agreement," he says. "We shall see whether they will be dealt with in a way which will enable contract signature." He again criticised the selection of the H225M despite "shortcomings", and warned he will re-open the contest if Airbus Helicopters fails to offer enough work to Polish industry. Macierewicz says helicopter manufacturing companies in Poland produce equipment "on many levels, sometimes better" than the Caracal.

Airbus Helicopters and engine supplier Turbomeca have promised production facilities in Poland for the H225M and its Makila 2A1 powerplants. But Macierewicz has suggested this would remove jobs from existing facilities of Sikorsky-owned PZL Mielec and AgustaWestland subsidiary PZL Świdnik. These unsuccessfully bid the S-70i Black Hawk/S-70B Seahawk and AW149, respectively. ■



A minimum fleet of 14 Atlas airlifters will be acquired

PRODUCTION BETH STEVENSON SEVILLE

Madrid rows back on A400M

Spain reaches agreement with Airbus to defer decision on acquiring final 13 transports

The Spanish air force has agreed with Airbus Defence & Space to acquire an initially reduced fleet of A400M tactical transports, until a funding solution can be found for the remainder of the fleet Madrid has committed to buy.

Fourteen A400Ms will be delivered between 2016 and 2022, after which a decision will be made on how to proceed on its remaining 13, Maj Gen Pablo Jose Castillo of the air force's air mobility command told SMI's Military Airlift and Rapid Reaction Operations conference in Seville on 1 December. The final decision has been postponed until 2024.

The air force is struggling to

fund the full acquisition, and a decision to reduce the buy or sell the final 13 aircraft to other customers would have to be agreed by the manufacturer and the Spanish government. Airbus says it "greatly welcomes" Spain's decision to restructure its deliveries.

"This agreement brings clarity to the A400M production schedule into the next decade, and ensures that the transformation of Spain's air mobility fleet is conducted in a measured and sustainable way," the company notes.

Under the new plan, nine roll-on mission kits will be provided for use on any of Spain's eventual 14 examples. This will include defensive aids system, satellite

communications and in-flight refuelling equipment.

"We expect to have at least nine fully operational aircraft," Castillo says, adding: "nine is the magic number for us."

Spain also plans to acquire three Airbus A330 multi-role tanker transports, Castillo confirms. A contract award had been expected during 2015, but with a general election to take place in the nation on 20 December, this is now likely to be pushed back until next year.

"We are working hard to have the A330 in our inventory," Castillo says, noting: "the solution isn't easy, because we have limited money." ■

DEVELOPMENT STEPHEN TRIMBLE WASHINGTON DC

Navy MQ-8C clears assessment test

Northrop Grumman's MQ-8C has completed a ground-based operational assessment, clearing the US Navy to prepare for a low-rate production decision next year and ship-based testing during 2017.

A three-week assessment of the unmanned version of the Bell 407 at Naval Base Ventura County at Point Mugu, California, compiled 72 data points during 11 flights totalling 83.4h. The MQ-8C is being prepared to replace the navy's Schweizer 333-based MQ-8B with longer-endurance and a heavier



Unmanned Bell 407 will replace Schweizer 333-based Fire Scout

payload for performing the Fire Scout surveillance role.

Capt Jeff Dodge, the navy's Fire Scout programme manager, says

the system "is meeting or exceeding our goals". The USN launched development of the MQ-8C with a \$262 million contract in 2012. ■

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DESIGN TOLGA OZBEK ISTANBUL

Ankara chooses BAE for fighter development

Turkey's Undersecretariat of Defence Industries (SSM) has chosen BAE Systems to assist with the design of the nation's next-generation fighter.

Ankara launched its TFX project in 2011, with a trio of concepts subsequently created by Turkish Aerospace Industries in conjunction with Gripen manufacturer Saab. These comprise single- and twin-engined models, which served as the basis for studies by the SSM.

Following the selection of BAE, Ankara is expected to choose one of the concepts within the next few weeks, and to sign an agreement with its development partner by February 2016. It has named Airbus Defence & Space as second choice, and for now will continue talks with both parties.

If confirmed as its partner, BAE will join the Turkish team for four years, and following on from this development phase, the TFX aircraft should be rolled out during 2023. The type is expected to enter service with the nation's air force in 2030.

The SSM also had invited Alenia Aermacchi, Saab and China's CATIC to submit interest as potential partners on the development activity. ■

ROTORCRAFT DOMINIC PERRY DONAUWÖRTH

H145M ready for Luftwaffe

First special forces-configured aircraft set for delivery, as Airbus Helicopters targets exports

Airbus Helicopters will transfer the first two of 15 H145M rotorcraft configured for special forces missions to its German air force launch customer on 8 December. Deliveries of the 3.7t type, derived from the latest version of its civilian model, will run until 2017.

Meanwhile, the airframer is continuing development work, as it looks to add offensive capabilities to the Turbomeca Arriel 2E-powered twin.

Germany's examples will be armed with retractable, pintle-mounted M134 7.62mm miniguns, initial test firings of which are scheduled for April 2016. Work next year will integrate other weapons, including MAG 58 door guns and 12.7mm guns and unguided rockets, says programme manager Scott Tumpak. The latter systems will be mounted on pylons either side of the fuselage, with each having a maximum capacity of 200kg (440lb).

Test flights with the pylon modification were performed this year, and certification is targeted for "no later than the second quarter" of 2016. Only "minimal" structural changes were required, adding only "a couple of kilos of weight", Tumpak notes.

Airbus Helicopters hopes to



Charles Abarr/Airbus Helicopters

Twin-engined type will soon be flown with pylon-mounted weapons

have the initial weapon system available from 2019, with a guided munitions capability with missiles and rockets to follow one to two years later. This could be accelerated if there is demand.

Initial H145Ms for the Royal Thai Army and navy – which have respectively ordered six and five units – also are in an advanced stage of production at the manufacturer's Donauwörth facility in Germany, with deliveries to start in 2016.

The airframer is hopeful additional customers will be signed up

next year, with interest expected to rise as the Luftwaffe's aircraft enter use. It refers to the service's model as an "extremely nice reference configuration" for buyers prioritising speed of delivery over a more bespoke platform.

Tumpak believes the US Army could convert some of its remaining orders for the UH-72 Lakota – based on the older, civilian EC145 – to the new H145M standard, and is hopeful that Washington could eventually revive its interest in a helicopter able to perform the armed aerial scout mission. ■

CONTRACT ELLIS TAYLOR SINGAPORE

Singapore advances F-16 upgrade with Lockheed

Lockheed Martin has been awarded a \$914 million contract to upgrade Singapore's fleet of 60 F-16C/D fighters.

Work will be performed at Fort Worth, Texas, and is set to be completed by 30 June 2023, according to an overview of the Foreign Military Sales deal published by the US Department of Defense. Lockheed was awarded the contract on a sole-source basis.

Singapore's defence ministry points to earlier statements outlining plans to equip its F-16s with

an active electronically scanned array radar and updated avionics.

In May 2015, the US State Department approved the sale of \$130 million-worth of equipment related to the upgrade, including Link 16 datalinks, BAE Systems APX-126 advanced identification friend-or-foe interrogator/transponders and Boeing joint helmet-mounted cueing systems. Sources indicate the aircraft will receive Northrop Grumman's Scalable Agile Beam Radar. ■

See World Air Forces P26




Commonwealth of Australia

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Swiss manufacturer recently completed deliveries of an initial 75 aircraft, with discussions ongoing for another 38 examples

OPERATIONS ATUL CHANDRA BENGALURU

Pilatus expands training role for India

With its ageing Kirans nearing retirement, air force calls on new PC-7 Mk II fleet to assume intermediate instruction tasks

India's air force has been required to start intermediate pilot training using its Pilatus PC-7 Mk II basic trainers, as the service struggles to keep the last of its aged Hindustan Aeronautics (HAL) Kirans operational until 2018.

"In the last couple of months, the Indian air force has thoroughly tested the aircraft with regard to its stage II training syllabus requirements, and determined the PC-7 Mk II is very capable for deployment in an intermediate flying training role," Pilatus Aircraft vice-president of government aviation Jim Roche confirms.

The PC-7 Mk II's service entry for India in early 2013 ended a crisis stemming from the grounding of its HAL HPT-32 Deepak basic trainers, on safety grounds.

Prior to the induction of the Swiss-built type, the air force undertook stage I and stage II training on Kiran jet trainers. The PC-7 Mk II fleet – which recently reached a total of 75 aircraft – will now be used during both phases.

Currently, the service plans to

acquire a further 38 of the aircraft, for a total of 113: fewer than an original goal of 181.

In early 2015, then-HAL chairman RK Tyagi told Flightglobal that the company's developmental HTT-40 basic trainer – an indigenous alternative to the PC-7 Mk II – would make its debut flight before the end of this year. Developmental work is expected to be complete by 2018, with an

armed version also to be available.

Despite the challenge posed by the HTT-40, Pilatus remains confident of securing a firm order for the additional 38 aircraft.

"Discussions are continuing between Pilatus and the Indian air force regarding implementation of the option clause within the current contract," says Roche.

Pilatus's backlog includes five PC-7 Mk IIs for Malaysia and nine

PC-9Ms for Jordan, which safeguard its production of the legacy models into 2017.

Meanwhile, HAL continues to have issues with its HJT-36 Sitara intermediate jet trainer, which after 15 years of development remains overweight, yet to clear spin trials and powered by an NPO Saturn AL-55I engine with a total technical life of only 300h. ■

See World Air Forces P26

TRANSPORTS

Ukraine completes its deliveries of more capable An-32RE

Antonov has returned an eighth and final batch of upgraded An-32RE tactical transports to the Indian air force. Delayed by more than 18 months, the delivery of the final five aircraft completes the life-extension, overhaul and modernisation of 40 aircraft to the "re-equipped" standard by Antonov and Plant 410 of Civil Aviation in Kiev, Ukraine.

A further 64 An-32s will be modified at the No. 1 Base Repair Depot in Kanpur. Work on a first pair has

already concluded, and is in progress on another four. The programme's schedule called for the project to be completed by March 2017, but this is likely to slip.

India's An-32 fleet was introduced between 1984 and 1991, and a \$400 million contract to upgrade 105 examples was signed with Ukraine in June 2009.

Now powered by upgraded Motor Sich AI-20 engines, which enable maximum payload to be increased

to 7.5t, the modernised An-32RE has had its total technical life extended by a further 15 years, enabling it to remain in service until at least 2035.

Additional enhancements include collision avoidance and ground proximity warning systems, satellite navigation, a new radar, and the addition of two multi-function displays in the cockpit. The programme also covers the supply of two full-mission simulators. ■

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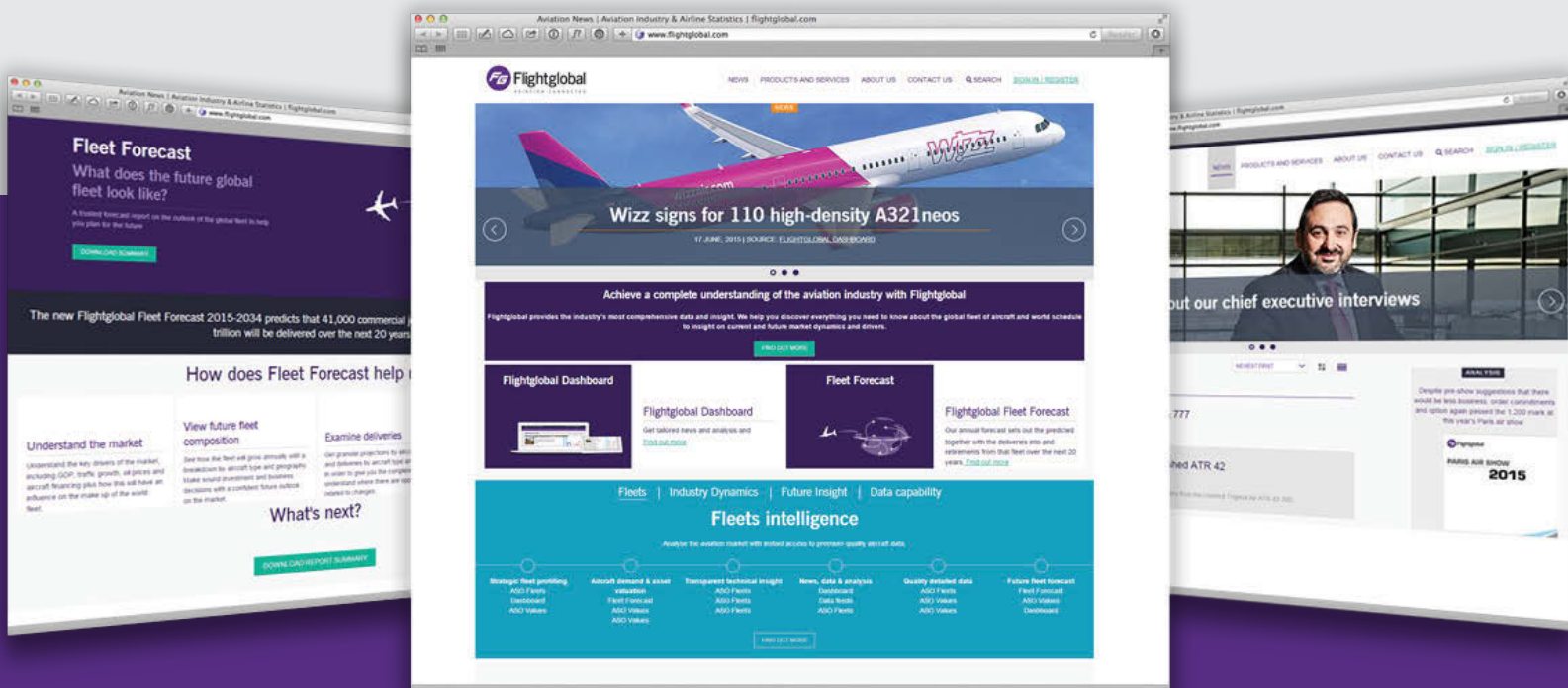
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**Evektor signs off
EV-55 deal**
BUSINESS AVIATION P24

PROCUREMENT BETH STEVENSON LONDON

Dutch air force chief calls for change

Commander says NATO nation cannot afford to spend decades on planning each expansion or upgrade to its weaponry

Royal Netherlands Air Force (RNLAf) commander Lt Gen Alexander Schnitger is calling for quicker programmes with shorter cycles and testing, to ensure that the nation receives truly modern equipment.

The Dutch service is in a phase of modernisation, accepting updated rotorcraft and preparing for a new fighter and unmanned air vehicle. It typically relies on imported equipment – albeit modern designs in line with allied NATO forces – but this can take time.

“We don’t have 20 years to build the next generation of systems,” Schnitger tells *Flight International*. “We need to speed up our processes and our innovation cycles. That’s perhaps the biggest challenge we are looking at in the air force: we need continuous development and change.”

One programme 20 years in the making is the Lockheed Martin F-35, 37 frontline examples of which have been authorised for the RNLAf, with deliveries expected between 2019 and 2024.

“There is a comma behind the 37 – not a full-stop,” Schnitger notes. “It is very possible that the budget will allow us to buy more aircraft, and the price is steadily coming down.”

Weapons selections for the Dutch aircraft have still to be made, with optimisation of the air-to-air role to ensure it exceeds the performance offered by its current Lockheed F-16 fleet. As for air-to-surface weapons, Schnitger says the Raytheon Small Diameter



F-35As should provide the Netherlands’ future strike capability

Bomb has been performing very well on the F-16, and the Netherlands could look to adopt the new SDB II with its F-35As. Other weapons, such as GBU-49 Paveway IIs and Boeing’s GBU-54 Joint Direct Attack Munition, could also be used, while current world events suggest stand-off weapons also need to be considered.

Schnitger says the air force has done most of the planning ahead of the introduction of the F-35, with its first two examples – acquired to support US-led initial operational test and evaluation – currently in use at Edwards AFB in California.

Meanwhile, the RNLAf has faced challenges with the integration of its NH Industries (NHI) NH90 rotorcraft, due to a “huge amount of corrosion” discovered after the type had been deployed at sea. After being suspended, de-



Lt Gen Alexander Schnitger

liveries have now resumed, and the programme is back on schedule; the nation is due to receive its last two aircraft in early 2016, to complete a 20-strong fleet.

Schnitger says the problem is being solved, and that 75% of the corrosion issues can be addressed by modification or regular preventive maintenance. “The remaining 25% will be solved by industry by mid-2017 through engineering and manufacturing changes,” he adds. “We are working through those problems, and we are happy with how NHI is addressing that.”

One challenge it is still contending with is the day-to-day availability of the type, but Schnitger says that this is to be expected. “We are still very much in the transition of getting the sustain-

ment part of the project right. NHI is wrestling with that, in this process of going from design and engineering, then production into full-blown sustainment.”

The Netherlands is modernising its Boeing AH-64 Apache fleet to the Block II standard, and receiving upgraded Chinooks in the CH-47F configuration. Schnitger notes that the latter path was selected because “there is nothing else out there. That goes to show true innovation in making steps that has been lacking,” he says.

Schnitger has expressed concerns about the level of innovation in the development of rotorcraft – including the US Army’s Future Vertical Lift (FVL) programme.

“My worry in replacing the Apache and Chinook 15 years from now is whether the platform and system will be innovative enough to make it survivable and operationally useful into the 2050s and beyond,” he says. “It is very difficult to give a definitive answer on this, but the fact that I ask the question is probably an indication that I doubt whether we are really pushing the envelope.”

Schnitger’s comments have alerted the US Army, which has sent personnel to Europe to discuss the RNLAf’s concerns, and the Dutch are in dialogue with the programme office.

He is also calling on European industry to have a larger part in development of the FVL. “There isn’t much visibility of European rotorcraft manufacturers, and I think they have some brilliant designers and concepts,” he notes.

The air force is planning to acquire the General Atomics Aeronautical Systems MQ-9 Reaper UAV to support joint and combined operations, although securing funding in the 2016 defence budget is challenging. “We have firm plans,” Schnitger says. “Everything is in place, but we had to slam the brakes on. I hope to get a resolution on the money: that is my goal.” ■

See World Air Forces P26



NH90 deliveries are back on track after corrosion problems



EXPANSION

KATE SARSFIELD LONDON

Dassault thinks bigger with Little Rock extension

Dassault has opened a 23,230m² (250,000ft²) hangar at its US facility in Little Rock, Arkansas, to house completions of the in-development Falcon 5X and 8X business jets.

Work is under way installing the first full VIP interior on 8X serial numbers three and six. The former will set off early next year on an intensive, one-month world tour to validate a finished aircraft in extreme conditions. A customer aircraft, the latter arrived in Little Rock in late November after making the type's North American debut at the National Business Aviation Association convention in Las Vegas, Nevada.

Little Rock's \$60 million extension boosts the centre's footprint to 116,000m², and makes it "the largest industrial facility in Dassault's network", says John Rosanvallon, chief executive of Dassault Falcon Jet.

The project comes seven years after the previous \$20 million upgrade, which added 10,800m² for 7X completions. Flightglobal's Fleets Analyzer database records 248 of the 5,950nm (11,000km)-range trijets in service.

Its ultra-long-range stablemate, the 8X, has completed its main flight-test campaign and is on track for certification and service entry in 2016.

Development of the all-new 5X programme has slowed due to troubles with its Silvercrest engine – in development at Safran's Snecma division. The large-cabin, long-range twinjet was rolled out in June 2015 and is scheduled for certification and service entry in 2017. Dassault plans to announce a new testing and production schedule for the 16-seat aircraft early next year.

Demand for new Falcon business jets slowed in the past year, Dassault reveals.

Rosanvallon noted at NBAA orders were proving particularly difficult in formerly strong markets like China, India and Russia. ■

AGREEMENT KATE SARSFIELD LONDON

Evektor gets lift from China

Up to 50 Czech-built turboprops will be used to serve growing network of regional airports

Czech general aviation manufacturer Evektor has signed an agreement with China's Guangdong Longhao group for the purchase of up to 50 EV-55 Outback utility aircraft.

The twin-engined turboprops will be used by the transportation, infrastructure and engineering company to spearhead its general aviation expansion in China. According to Evektor, this will involve developing several new airports around the country, to be served by EV-55s. The aircraft will be supported at each site by a dedicated maintenance centre, to be established by Evektor.

The Kunovice-based airframer was acquired by Malaysian company Aspirasi Pertiwi in 2014 for \$200 million, and is working to secure European CS-23 certification for the nine- to 14-seat, all-metal aircraft in 2017. One EV-55 prototype has logged over 220h of flight testing, and a second is expected to join the programme shortly.



The P&WC-powered twin is the manufacturer's first utility aircraft

Powered by a pair of Pratt & Whitney Canada PT6A-21 engines, the EV-55 is Evektor's first foray into the business and utility aircraft market.

The company is best known as a producer of light aircraft, such as the two-seat SportStar and Harmony piston singles.

The manufacturer says its ob-

jective with the 800nm (1,480km)-range EV-55 is to replace huge fleets of "obsolete" six- to nine-seat piston twins – including Cessna 402/404s – and provide a strong competitor to established in-production single-engined utility rivals, such as the Pilatus PC-12NG and Cessna's Caravan family. ■

DELIVERY KATE SARSFIELD LONDON

First Kodiaks are shipped to Japan

Quest Aircraft has delivered the first Japanese-registered Kodiak single-engined turboprops to an unnamed seaplane operator, after certification of the 10-seat, high-wing type in November by the country's civil aviation authority.

Asia Pacific is an increasingly lucrative market for Quest. The region has nearly 20% of the 150-strong global Kodiak fleet, including the first two Philippine-registered aircraft, delivered to charter operator Subic Air last month. "We have had success in the Asia Pacific region and expect to see additional deliveries next year," says Quest chief executive, Sam Hill. "The Kodiak's versatility and performance capabilities, including for seaplane



An undisclosed operator has received seaplane version of type

operations, makes it perfect for a range of missions in this region."

To date, the Pratt & Whitney Canada PT6A-54-powered Kodiak has been certificated in 31 countries, and further validations are imminent, the airframer says. Thanks to the burgeoning international market for the

\$2 million aircraft, the Kodiak was the best turboprop performer in the third quarter of 2015, according to data from the US General Aviation Manufacturers Association. Twenty were delivered between January and September: a climb of over 30% on the same period last year. ■



ORDER KATE Sarsfield LONDON

Diamond sparkles with Embry-Riddle

Diamond Aircraft has sold 10 DA42-VI piston-twins to Embry-Riddle Aeronautical University for multi-engine pilot training.

The first 168shp (125kW) Austro Engine AE300-powered aircraft will be delivered to the institution's Daytona, Florida facility in April 2016, and all the units are expected to be in service by the end of September.

Diamond has been a regular supplier of aircraft to Embry-Riddle since 2009, with 14 Textron Lycoming IO360-powered DA42s delivered to the training provider so far.

The DA42-VI is the third generation of the all-composite, 11-year-old piston-twin. Introduced in 2013, the diesel-fuelled aircraft features a Garmin G1000

cockpit, has a maximum speed of 200kt (370km/h), an empty weight of 1,410kg (3,110lb) and a take-off ground roll of 1,083ft

(330m). Around 850 DA42s have been delivered to date, including 35 of the type in the first three quarters of 2015. ■



Austro Engine AE300s will power the university's 10 aircraft

DEVELOPMENT STEPHEN TRIMBLE WASHINGTON DC

First flight for Rutan SkiGull

Veteran designer promises more innovations after completing his amphibious aircraft

Burt Rutan has pledged to continue designing new aircraft after completing the first flight of the home-built SkiGull amphibian, his 47th design to fly.

The flight on 24 November from a runway in Coeur d'Alene, Idaho, lasted 1.8h and checked out the single-engined aircraft's basic handling, according to a Facebook page for the forthcoming documentary, *Looking way, way up: the Burt Rutan story*.

Test pilot Glenn Smith said the aircraft felt "responsive, predictable and fun".

Pictures reveal an amphibious design with retractable skis for water take-off and landing, which reduces the aerodynamic penalty imposed by a boat hull shape.

In a letter to the Experimental Aircraft Association, published online, Rutan explains that the SkiGull needs as much fuel efficiency as possible. He intends to pilot the light aircraft on long-endurance flights across oceans.

Rutan began building the SkiGull in early 2014, a few years after retiring from managing Scaled Composites, the shop where he designed breakthrough aircraft such as the Voyager, Proteus and SpaceShipOne.

But Rutan, 72, admits the process of building a home-built, composite aircraft is too exhausting for him to attempt again. Rather than piecing new aircraft together in his garage, Rutan says he will continue designing new models and leave the building work to others.

Meanwhile, he intends to resume playing golf, the hobby Rutan abandoned two years ago to complete the SkiGull. The aircraft has a "huge baggage compartment", he writes, which may allow him to "load it up for golf trips".

The EAA also hopes that Rutan will display the SkiGull at the AirVenture fly-in in Oshkosh, Wisconsin in July 2016. He unveiled the SkiGull design at this year's show, but was unable to complete the aircraft in time to fly it to Oshkosh in person. ■



Fuel efficiency is a key focus on the single-engined concept

PROPULSION

ALEXANDER ZUDIN LONDON

Russia plans to evaluate avgas alternatives

Russian general aviation operators in remote, oil-rich regions could save 20-40% of flight hour costs in future, according to research being carried out at the Baranov Central Institute of Aviation Motor Development (TsIAM) into non-traditional aviation fuels, including from associated petroleum gas.

The institute's calculations show that, in regions with a well-developed oil and gas economy – particularly in the far north of Russia – the use by regional aviation of condensed fuels would cut spending on aviation fuel by 5%, and increase engine lifespans by 20-30%, as well as trimming the cost of a flight hour by 20-40%. Such an advance would also reduce pollution, it claims.

The institute's scientists are "developing the concept of a dual-fuel flying engine demonstrator working on liquefied gas and also traditional fuel," it says.

During November, Baranov TsIAM specialists unveiled an aviation piston engine demonstrator working on an experimental type of condensed aviation fuel.

The impetus for using such fuels in Russia's regions needs further market research, but "on the technical side, all the issues are resolved", says Baranov TsIAM director Aleksandr Lanshin. The concept is being studied in co-operation with the Zhukovsky Central Aerohydrodynamic Institute, United Engine Corporation, representatives from the Russian Ministry of Industry and Trade and others, Baranov TsIAM says.

Russia has practical experience of developing such technologies.

The nation flew a Tupolev Tu-155 with an NK-88 engine – developed by Samara-based NK Engines – using liquefied natural gas as far back as 1969, the institute notes. ■



Commonwealth of Australia

With instability in parts of the Middle East and terrorist strikes targeting Europe, the level of action by allied air arms intensified throughout 2015

A YEAR OF CONFLICT

With multiple nations involved in combat action over Iraq and Syria, equipment decisions and procurement plans are of great significance. We detail the global fleet

CRAIG HOYLE LONDON

DATA COMPILED BY **MARK KWIATKOWSKI, SANDRA LEWIS-RICE, JOHN MALONEY**

& **MARC-ANTONY PAYNE** FLIGHTGLOBAL FLEETS ANALYZER LONDON

DATA ANALYSIS BY **ANTOINE FAFARD** FLIGHTGLOBAL INSIGHT LONDON

With conflicts raging in several nations – notably Iraq, Syria and Yemen – and with terrorist activity having targeted Western civilians in Egypt, France and Tunisia, 2015 has been marked by crises and instability.

Moscow increased the pressure within Syria by deploying a significant contingent of combat aircraft and helicopters, before mounting a major offensive involving not just these, but also long-range cruise missiles fired

from the Caspian Sea and by its strategic bomber fleet. Its intervention complicated the make-up of an air campaign being staged by the USA and multiple other nations against Islamic State militants, and raised the spectre of a clash between deployed forces.

These tensions reached a new high in late November, following the downing of a Russian Sukhoi Su-24 strike aircraft by a Turkish air force-operated Lockheed Martin F-16 in what has for several years been the

rarest of events: an air-to-air engagement. With Moscow subsequently deploying S-400 surface-to-air missiles and arming combat aircraft with air-to-air missiles, pessimists will fear such an incident could be repeated, in a theatre which is already on edge due to the numerous players and their contrasting objectives for the regime in Damascus.

Already the subject of criticism for its annexation of Crimea from Ukraine and continuing to probe NATO's air defences in the Baltic States, Russia's intentions remain hard to read. Coalition assets are busy responding to Moscow's aircraft from Baltic Air Policing bases in Estonia and Lithuania, supported by quick reaction fighters in other locations, including Norway, Poland and Sweden.

Elsewhere during the activity against Islamic State and other terrorist groups, regional air forces – including those of Bahrain, Jordan, Morocco, Qatar, Saudi Arabia and the United Arab Emirates – have participated in combat, and in some cases lost aircraft.

JOINT EXERCISES

With an operational focus at the forefront for many air arms, the need to participate in major exercises has also assumed greater importance. Notable examples during 2015 included NATO's massive Trident Juncture manoeuvres – involving more than 36,000 personnel from 30 nations – and an Israeli air

force-hosted Blue Flag event. The latter attracted the involvement of aircraft from allies including Greece, Poland and the USA.

Continued instability in parts of the Middle East is sure to see the existing level of action maintained, and in all likelihood intensified, over the coming year. As evidenced by the late October bombing of a MetroJet Airbus A321 after departure from Sharm el-Sheikh in Egypt, the threats posed to aviation by unrest are very real for airlines also. A total of 224 passengers and crew died as a result of the attack on the Russian-operated aircraft.

For the first time, our annual overview of the global military aircraft inventory has been compiled using just part of the information contained within Flightglobal's Fleets Analyzer database. Recently launched, this holds premium-quality data on more than 345,000 aircraft, also including airliners, rotorcraft and business jets.

Our data shows that only the North America region experienced a within-year total fleet reduction

We record just over 52,100 military aircraft in active service around the globe, with our listing showing the fleets held by air arms in some 160 nations. This year's fleet total represents an increase of just 0.8% from the figures contained in our directory for 2015.

Of the in-service equipment, the USA's armed forces account for the largest share, with just over 26% of the total active inventory; slightly more than 13,700 aircraft. The bulk of a year-on-year reduction of just over 200 aircraft recorded for Washington's military can be attributed to the retirement of 130 Bell Helicopter OH-58 Kiowa Warrior armed

| GLOBAL MILITARY FLEET | | | |
|-----------------------|-------------|--------------|-------|
| | Country | Active fleet | Share |
| 1 | USA | 13,717 | 26% |
| 2 | Russia | 3,547 | 7% |
| 3 | China | 2,942 | 6% |
| 4 | India | 2,086 | 4% |
| 5 | Japan | 1,590 | 3% |
| 6 | South Korea | 1,429 | 3% |
| 7 | France | 1,282 | 2% |
| 8 | Egypt | 1,133 | 2% |
| 9 | Turkey | 1,007 | 2% |
| 10 | North Korea | 944 | 2% |
| | Other | 22,430 | 43% |
| TOTAL | | 52,107 | 100% |

scouts and some of its Bell 206-based TH-67A Creek trainers, at the start of a major aviation restructuring. More cuts will follow next year, but Congressional action has so far saved the US Air Force from long-threatened reductions to its Fairchild-Republic A-10 ground-attack fleet.

Our data shows that only the North America region experienced a within-year total fleet reduction, while the numbers stayed flat in Europe and Latin America. The biggest increases – of 3% each – were in the Middle East and Russia and Commonwealth of Independent States groupings, while Asia-Pacific and Africa saw rises of 2%.

SPECIAL-MISSION GROWTH

Fleets Analyzer's improved data about types assigned for a variety of special-mission applications, meanwhile, sees the total number of such aircraft included rise from 1,866 last time to 2,047, or by 9.7%.

In addition to the active fleet, another 4,500 aircraft are recorded as being the subject of firm orders, while more than 8,250 more are the subject of pending deals, letters of intent or national procurement plans.



Ukraine is experiencing continued unrest

Among the most significant fleet developments of 2015, Lockheed's F-35 can now be listed as an operational type, with the short take-off and vertical landing B-model variant having achieved initial operational capability (IOC) status with lead user the US Marine Corps.

Our data shows 26 combat-rated examples as being in the service's inventory, supported by another 11 aircraft which are allocated as training assets.

The USAF should follow suit in declaring IOC readiness towards the end of 2016, with the conventional take-off and landing F-35A. Its first "combat-coded" pair of Lightning IIs were received earlier this year in advance of the development.

Other boosts for the F-35 programme have included full commitments from Norway and the UK – respectively for 48 and 138 frontline examples – and production examples are under contract for these nations, plus Israel, Italy, Japan and the three US services. However, the election of a new government in Canada has cast doubt on Ottawa's long-held commitment to the type, and Lockheed's rivals are also sniffing opportunities to poten-

WORLDWIDE TOP 10 ACTIVE AIRCRAFT TYPES

| COMBAT AIRCRAFT | | | |
|-----------------|----------|--------------|-------|
| | Type | Active fleet | Share |
| 1 | F-16 | 2,264 | 16% |
| 2 | F-18 | 1,047 | 7% |
| 3 | Su-27/30 | 943 | 6% |
| 4 | F-15 | 858 | 6% |
| 5 | MIg-29 | 819 | 6% |
| 6 | MIg-21 | 551 | 4% |
| 7 | Su-25 | 503 | 3% |
| 8 | F-5 | 482 | 3% |
| 9 | F-7 | 459 | 3% |
| 10 | J-7 | 418 | 3% |
| | Other | 6,208 | 43% |
| TOTAL | | 14,552 | 100% |

| TRANSPORT | | | |
|-----------|-------------|--------------|-------|
| | Type | Active fleet | Share |
| 1 | C-130/L-100 | 947 | 22% |
| 2 | King Air | 302 | 7% |
| 3 | C-17 | 269 | 6% |
| 4 | C295/CN235 | 261 | 6% |
| 5 | An-24/26 | 240 | 6% |
| 6 | Il-76 | 167 | 4% |
| 7 | An-30/32 | 140 | 3% |
| 8 | Cessna 208 | 128 | 3% |
| 9 | C160 | 119 | 3% |
| 10 | C212 | 94 | 2% |
| | Other | 1,617 | 38% |
| TOTAL | | 4,284 | 100% |

| COMBAT HELICOPTERS | | | |
|--------------------|---------------|--------------|-------|
| | Type | Active fleet | Share |
| 1 | S-70/SH/UH-60 | 3,582 | 18% |
| 2 | Mi-8/17 | 2,555 | 13% |
| 3 | UH-1 | 1,404 | 7% |
| 4 | AH-64 | 1,116 | 6% |
| 5 | Mi-24/35 | 918 | 5% |
| 6 | CH-47 | 898 | 5% |
| 7 | MD500/530 | 675 | 3% |
| 8 | OH-58 | 582 | 3% |
| 9 | AH-1 | 566 | 3% |
| 10 | SA341/342 | 501 | 3% |
| | Other | 6,853 | 34% |
| TOTAL | | 19,650 | 100% |

WORLDWIDE ACTIVE FLEET PER REGION

NORTH AMERICA

| | |
|-------------------------------|-------|
| Combat aircraft | 2,849 |
| Special mission | 777 |
| Tanker | 592 |
| Transport | 1,099 |
| Combat helicopter | 5,916 |
| Training aircraft/helicopters | 2,910 |

NORTH AMERICA

-1%

Year-on-year fleet change

EUROPE

| | |
|-------------------------------|-------|
| Combat aircraft | 2,096 |
| Special mission | 316 |
| Tanker | 50 |
| Transport | 679 |
| Combat helicopter | 3,380 |
| Training aircraft/helicopters | 2,084 |

EUROPE

0%

Year-on-year fleet change

LATIN AMERICA

| | |
|-------------------------------|-------|
| Combat aircraft | 532 |
| Special mission | 144 |
| Tanker | 8 |
| Transport | 491 |
| Combat helicopter | 1,224 |
| Training aircraft/helicopters | 806 |

LATIN AMERICA

0%

Year-on-year fleet change

NOTE: CIS countries include Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan and Uzbekistan
SOURCE: Flightglobal's Fleets Analyzer database

RUSSIA & CIS

| | |
|-------------------------------|-------|
| Combat aircraft | 1,860 |
| Special mission | 137 |
| Tanker | 19 |
| Transport | 400 |
| Combat helicopter | 1,571 |
| Training aircraft/helicopters | 447 |

RUSSIA & CIS

3%

Year-on-year fleet change

MIDDLE EAST

| | |
|-------------------------------|-------|
| Combat aircraft | 1,268 |
| Special mission | 97 |
| Tanker | 43 |
| Transport | 271 |
| Combat helicopter | 1,349 |
| Training aircraft/helicopters | 999 |

MIDDLE EAST

3%

Year-on-year fleet change

AFRICA

| | |
|-------------------------------|-------|
| Combat aircraft | 1,003 |
| Special mission | 64 |
| Tanker | 6 |
| Transport | 412 |
| Combat helicopter | 1,373 |
| Training aircraft/helicopters | 968 |

ASIA-PACIFIC

2%

Year-on-year fleet change

ASIA-PACIFIC

| | |
|-------------------------------|-------|
| Combat aircraft | 4,944 |
| Special mission | 512 |
| Tanker | 36 |
| Transport | 932 |
| Combat helicopter | 4,837 |
| Training aircraft/helicopters | 2,606 |

AFRICA

2%

Year-on-year fleet change

FLEET SIZE FOR LEADING COUNTRIES BY ROLE

| COMBAT AIRCRAFT | | | |
|-----------------|-------------|--------------|-------|
| | Country | Active fleet | Share |
| 1 | USA | 2,785 | 19% |
| 2 | China | 1,528 | 11% |
| 3 | Russia | 1,438 | 10% |
| 4 | India | 809 | 6% |
| 5 | North Korea | 572 | 4% |
| 6 | Egypt | 427 | 3% |
| 7 | South Korea | 426 | 3% |
| 8 | Pakistan | 394 | 3% |
| 9 | Taiwan | 287 | 2% |
| 10 | Japan | 287 | 2% |
| | Other | 5,599 | 37% |
| TOTAL | | 14,552 | 100% |

| SPECIAL MISSION | | | |
|-----------------|-----------|--------------|-------|
| | Country | Active fleet | Share |
| 1 | USA | 754 | 37% |
| 2 | Japan | 159 | 8% |
| 3 | Russia | 137 | 7% |
| 4 | China | 78 | 4% |
| 5 | India | 76 | 4% |
| 6 | Brazil | 50 | 2% |
| 7 | France | 42 | 2% |
| 7 | Indonesia | 42 | 2% |
| 9 | Israel | 41 | 2% |
| 9 | Spain | 41 | 2% |
| | Other | 627 | 30% |
| TOTAL | | 2,047 | 100% |

| TANKER | | | |
|--------|--------------|--------------|-------|
| | Country | Active fleet | Share |
| 1 | USA | 586 | 78% |
| 2 | Russia | 19 | 3% |
| 3 | Saudi Arabia | 18 | 2% |
| 4 | France | 14 | 2% |
| 5 | Israel | 13 | 2% |
| 6 | Singapore | 9 | 1% |
| 6 | UK | 9 | 1% |
| 8 | India | 7 | 1% |
| 8 | Italy | 7 | 1% |
| 8 | Turkey | 7 | 1% |
| | Other | 65 | 8% |
| TOTAL | | 754 | 100% |

» tially edge the F-35 out of the picture in nations like Belgium.

Against this backdrop, Lockheed and the US programme office can be expected to mount a major campaign to showcase the F-35 during 2016, with an appearance at the Royal International Air Tattoo and Farnborough air show all but certain.

While the F-35 continues to make progress towards operational utility, 2015 was a remarkable year for one of the fighter sector's more proven products. After years of campaign disappointments, Dassault in February secured its first export order for the Rafale – then two months later its second. A first batch of three, twin-seat examples has been supplied to Egypt, under the nation's 24-unit deal, while Qatar is to acquire 36.

FRENCH SUCCESS

India also has established a pending requirement for 36 of the type, having dramatically downgraded the fleet expectations of its medium multirole combat aircraft requirement. But no contract has yet been signed.

The Eurofighter consortium appears poised

for success with its third Middle Eastern customer, with Kuwait announcing a pending deal for 28 Typhoons – the final details for which are being worked out with the Italian government. Success could mean the end of

After years of campaign disappointments, Dassault secured its first export order for the Rafale – then a second

Boeing's hopes of selling its production-threatened F/A-18E/F Super Hornet to the Kuwait air force, although the company believes a deal could be done regardless of a selection of the European type. The manufacturer is counting on additional orders from the US Navy and potentially other export buyers to extend production of the carrier-optimised type beyond late this decade.

Saab's Gripen has also enjoyed success, with Brazil having finalised a contract for its first 28 NG-model examples, and the first Em-

braer engineers are in Sweden to develop their skills on the single-engined type. The coming year will see a first flight of the lead example of three prototypes of the E-model version being produced first for Sweden, with final assembly starting recently.

At the heavier end of the spectrum, Northrop Grumman won selection to build the USAF's planned fleet of 100 long-range strike bombers, although the award remains the subject of a challenge from a rejected Boeing and Lockheed team. If confirmed, the proposed \$80 billion deal will safeguard Northrop's legacy as a bomber manufacturer, and eventually deliver replacements for the service's veteran Boeing B-52Hs – 77 of which remain in use today – and younger B-1Bs.

The airlift sector has seen the C-17 strategic airlifter exit production, after final unit sales to nations including Australia, Canada and Qatar. With the US type no longer on offer, Airbus Defence & Space has yet to capitalise on export opportunities with its A400M. The European manufacturer is struggling to deliver its promised tactical capabilities, and a fatal accident in May 2015 led to a brief suspen-



The US Air Force has selected Northrop Grumman to produce 100 long-range strike bombers, with the new model to replace its B-1Bs

| TRANSPORT | | | |
|-----------|----------|--------------|-------|
| | Country | Active fleet | Share |
| 1 | USA | 1,059 | 25% |
| 2 | Russia | 365 | 9% |
| 3 | India | 230 | 5% |
| 4 | China | 181 | 4% |
| 5 | France | 136 | 3% |
| 6 | Brazil | 130 | 3% |
| 7 | Iran | 87 | 2% |
| 8 | Turkey | 83 | 2% |
| 9 | Japan | 70 | 2% |
| 10 | Colombia | 69 | 2% |
| | Other | 1,874 | 43% |
| TOTAL | | 4,284 | 100% |

| COMBAT HELICOPTERS | | | |
|--------------------|-------------|--------------|-------|
| | Country | Active fleet | Share |
| 1 | USA | 5,762 | 29% |
| 2 | Russia | 1,218 | 6% |
| 3 | China | 801 | 4% |
| 4 | South Korea | 679 | 3% |
| 5 | India | 646 | 3% |
| 6 | Japan | 625 | 3% |
| 7 | France | 538 | 3% |
| 8 | Turkey | 423 | 2% |
| 9 | Italy | 373 | 2% |
| 10 | Germany | 345 | 2% |
| | Other | 8,240 | 43% |
| TOTAL | | 19,650 | 100% |

| TRAINING AIRCRAFT/HELICOPTERS | | | |
|-------------------------------|-------------|--------------|-------|
| | Country | Active fleet | Share |
| 1 | USA | 2,771 | 26% |
| 2 | Japan | 444 | 4% |
| 3 | Egypt | 387 | 4% |
| 4 | Russia | 370 | 3% |
| 5 | China | 352 | 3% |
| 6 | UK | 330 | 3% |
| 7 | India | 318 | 3% |
| 8 | Turkey | 276 | 3% |
| 9 | France | 268 | 2% |
| 10 | South Korea | 256 | 2% |
| | Other | 5,048 | 47% |
| TOTAL | | 10,820 | 100% |

sion of flights. But operational experience is growing, with five nations now operating the type and Spain to receive its first example during 2016.

AIRLIFT RIVALRY

Discussions over a contract revision covering future delivery rates and the introduction of new capabilities must reach a satisfactory outcome if other nations are to follow the seven launch nations and Malaysia in acquiring the model. Strong competition will be seen in the shape of Lockheed's smaller C-130J, with Atlas operator France having requested the potential purchase of two of the latter transports and two tankers recently.

Embraer's KC-390 took to the air in February, but did not fly again until late October, partly due to a funding crisis in the Brazilian defence ministry. Strong progress is needed if the transport and tanker is to enter service as planned during 2018. Despite the challenges facing the company, Antonov's An-178 also made its debut during 2015, and was present at the Paris and Dubai air shows.

For the first time in several years, the spoils were shared in the tanker sector, with Airbus Defence & Space taking a four-aircraft contract in South Korea with the A330 MRTT and Boeing getting a first international order for its 767-derived KC-46A, with Japan to take three. This rivalry will intensify in 2016, as Boeing



Greek F-16s participated in multinational exercises with NATO allies and also in Israel

anticipates the receipt of a low-rate initial production decision from the USAF.

Notable retirements in 2015 included the bulk of the UK's search-and-rescue-tasked Westland Sea Kings, whose services are being assumed by civilian aircraft via the Long SAR programme, and the last of Argentina's Dassault Mirage III and Mirage 5 fighters. The latter's air force must adapt to degraded capability, as an expected deal to acquire upgraded Kfir fighters from Israel Aerospace

Industries failed to reach the contract stage.

Excluded from our listing are 770 military fixed-wing aircraft and helicopters recorded as dedicated to VIP transport, and 550 for research and development and experimental activities.

Other exclusions include more than 5,200 aircraft in storage – also counting those involved in or awaiting upgrade – and piston-engined types, on which our database does not hold information. ■

EXPLANATORY NOTES

Flight International's annual World Air Forces directory uses information compiled for Flightglobal's Fleets Analyzer database by Mark Kwiatkowski, Sandra Lewis-Rice, John Maloney and Marc-Antony Payne, and abridged by editor Craig Hoyle for our listings format. Available to subscribers, our database provides users with detailed fleet and orders information, in the majority of cases down to serial-number level. Fleet analysis is provided by Antoine Fafard, from Flightglobal Insight. This produces a wide range of free sponsored reports, covering military, air transport and business aviation

topics, through to more specialist studies on the maintenance or aircraft finance sectors. For additional information, or to download other special reports, visit flightglobal.com/insight

Fleet information is divided into these categories: **Active:** Aircraft in day-to-day use. For some Soviet-era types where only summary information is available, this also includes some non-operational platforms.

Ordered: Aircraft on firm order. Others which are pending purchase approval or contract signature are marked with

an asterisk. This category includes current planned order totals, which may be subject to future revision.

Abbreviations

AEW airborne early warning; **Comms** communications; **ELINT** electronic intelligence; **EW** electronic warfare; **MPA** maritime patrol aircraft; **Recce** reconnaissance; **SAR** search and rescue; **SIGINT** signals intelligence

To download your free copy of the directory from 8 December, visit flightglobal.com/waf



| AFGHANISTAN | | | |
|-------------------------------|--------|---------|--|
| AFGHAN AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| EMB-314 | 10 | 10 | |
| Transport | | | |
| C-130H | 4 | | |
| Cessna 208 | 25 | | |
| Combat helicopter | | | |
| MD530 | 12 | 13+28* | |
| Mi-8/17 | 42 | | |
| Mi-35 | 7 | | |
| UH-1H | 10 | | |
| Training aircraft/helicopters | | | |
| SA315 | 3 | | |
| AFGHAN SPECIAL MISSION WING | | | |
| Type | Active | Ordered | |
| Transport | | | |
| PC-12NG | 17 | | |
| Combat helicopter | | | |
| Mi-8/17 | 55 | | |
| ALBANIA | | | |
| ALBANIAN AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat helicopter | | | |
| AS532 | 4 | | |
| AW109 | 1 | | |
| Bell 205 | 3 | | |
| Bell 206 | 5 | | |
| BO105 | 8 | | |
| EC145 | 1 | 2 | |
| ALGERIA | | | |
| ALGERIAN AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| MiG-25 | 13 | | |
| MiG-29 | 32 | | |
| Su-24 | 23 | | |
| Su-30 | 44 | 14 | |
| Special mission | | | |
| Beech 1900 (Recce) | 6 | | |
| King Air 200/350 (MPA) | 3 | | |
| Tanker | | | |
| Il-78 | 4 | | |
| Transport | | | |
| Beech 1900 | 6 | | |
| C-130H | 15 | | |
| C295 | 5 | | |
| Il-76 | 12 | | |
| King Air 90/200/350 | 20 | | |
| PC-6 | 2 | | |
| Combat helicopter | | | |
| AS355 | 14 | | |
| AW139 | 11 | | |
| Bell 412 | 3 | | |

| Ka-32 | 3 | | |
|-------------------------------|--------|---------|--|
| Mi-2 | 21 | | |
| Mi-8/17/171 | 101 | | |
| Mi-24 | 34 | | |
| Mi-26 | 2 | 12 | |
| Mi-28 | | 42 | |
| W-3 | | 15* | |
| Training aircraft/helicopters | | | |
| AW119 | 8 | | |
| L-39 | 32 | | |
| W-3 | 8 | | |
| Yak-130 | 16 | | |
| ALGERIAN NAVY | | | |
| Type | Active | Ordered | |
| Combat helicopter | | | |
| AW101 | 6 | | |
| AW139 | 3 | | |
| Super Lynx 130/140 | 4 | 6 | |
| ANGOLA | | | |
| ANGOLAN PEOPLE'S AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| EMB-314 | 6 | | |
| MiG-21 | 23 | | |
| MiG-23 | 22 | | |
| Su-22 | 14 | | |
| Su-25 | 12 | | |
| Su-27/30 | 1 | 12 | |
| Special mission | | | |
| C212 (MPA) | 4 | | |
| Transport | | | |
| An-12 | 10 | | |
| An-24/26 | 1 | | |
| An-30/32 | 7 | | |
| An-72/74 | 7 | | |
| C212 | 2 | | |
| Dornier 28 | 1 | | |
| Il-76 | 9 | | |
| Yak-40 | 1 | | |
| Combat helicopter | | | |
| Bell 212 | 9 | | |
| Mi-8/17/171 | 53 | | |
| Mi-24 | 15 | | |
| SA316 | 20 | | |
| SA342 | 8 | | |
| Training aircraft/helicopters | | | |
| EMB-312 | 13 | | |
| L-29 | 6 | | |
| L-39 | 3 | | |
| PC-7 | 22 | | |
| PC-9 | 4 | | |
| ARGENTINA | | | |
| ARGENTINIAN AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |

| A-4 | 22 | | |
|---------------------------------|--------|---------|--|
| IA-58 | 32 | | |
| IA-63 | 22 | | |
| Special mission | | | |
| Learjet 35 (Calibration/survey) | 3 | | |
| Learjet 35 (EW) | 1 | | |
| Tanker | | | |
| KC-130H | 1 | | |
| Transport | | | |
| C-130H/L-100 | 3 | | |
| F27 | 1 | | |
| F28 | 3 | | |
| KC-390 | 6* | | |
| Combat helicopter | | | |
| Bell 212 | 9 | | |
| H125 | 12* | | |
| Ka-226 | 3* | | |
| MD500 | 12 | | |
| Mi-171 | 2 | 5* | |
| SA315 | 3 | | |
| Training aircraft/helicopters | | | |
| AT/IA-63 | 17 | 18 | |
| EMB-312 | 14 | | |
| G120TP | 10 | | |
| OA-4AR | 3 | | |
| T-34 | 10 | | |
| ARGENTINIAN ARMY | | | |
| Type | Active | Ordered | |
| Transport | | | |
| C212 | 2 | | |
| Cessna 208 | 2 | | |
| Citation Bravo | 1 | | |
| DHC-6 | 2 | | |
| Merlin III/IV | 4 | | |
| Combat helicopter | | | |
| AS332 | 3 | | |
| AW109 | 3 | | |
| SA315 | 2 | | |
| UH-1H | 49 | | |
| Training aircraft/helicopters | | | |
| Bell 206 | 5 | | |
| ARGENTINIAN NAVY | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| Super Etendard | 10 | | |
| Special mission | | | |
| King Air 200 (MPA) | 4 | | |
| P-3B (MPA) | 4 | | |
| S-2 (MPA) | 2 | | |
| Transport | | | |
| C212 | | 1 | |
| F28 | 1 | | |
| King Air 200 | 3 | | |
| PC-6 | 1 | | |
| Combat helicopter | | | |



Australia expanded its C-17 fleet to eight, as production came to an end. We record 269 of the type in active service worldwide

| | | | |
|--|--------|---------|--|
| AS555 | 3 | | |
| S-61/SH-3H | 5 | | |
| ARMENIA | | | |
| ARMENIAN AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| Su-25 | 11 | | |
| Transport | | | |
| Il-76 | 3 | | |
| Combat helicopter | | | |
| Mi-8/17 | 10 | | |
| Mi-24 | 15 | | |
| Training aircraft/helicopters | | | |
| L-39 | 6 | | |
| Mi-2 | 6 | | |
| NAGORNO-KARABAKH DEFENCE ARMY AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| Su-25 | 2 | | |
| Combat helicopter | | | |
| Mi-8 | 5 | | |
| Mi-24 | 5 | | |
| AUSTRALIA | | | |
| ROYAL AUSTRALIAN AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| F/A-18A | 54 | | |
| F/A-18F | 24 | 12* | |
| F-35A | | 98* | |
| Special mission | | | |
| 737 (E-7A) (AEW) | 6 | | |
| 737 (P-8) (MPA) | | 4+8* | |
| AP-3C (MPA) | 15 | | |
| EA-18G (EW) | | 12 | |
| Tanker | | | |
| A330 | 5 | 2 | |
| Transport | | | |
| C-17 | 8 | | |
| C-27J | 2 | 8 | |
| C-130J | 12 | | |
| King Air 350 | 8 | | |
| Training aircraft/helicopters | | | |
| F/A-18B | 15 | | |
| F-35A | 2 | | |
| Hawk 127 | 33 | | |
| King Air 350 | 8 | | |
| PC-9 | 59 | | |
| PC-21 | | 49* | |
| AUSTRALIAN ARMY AVIATION | | | |
| Type | Active | Ordered | |
| Combat helicopter | | | |
| Bell 206 | 19 | | |
| CH-47D/F | 9 | | |
| NH90 (TTH) | 33 | 14 | |
| S-70/UH-60A | 34 | | |
| Tiger | 22 | | |
| Training aircraft/helicopters | | | |
| Bell 206 | 12 | | |
| EC135 (HATS) | 1 | 14 | |
| ROYAL AUSTRALIAN NAVY | | | |
| Type | Active | Ordered | |
| Combat helicopter | | | |
| S-70/MH-60R | 21 | 19 | |
| Training aircraft/helicopters | | | |
| AS350 | 12 | | |
| Bell 429 | 3 | | |
| AUSTRIA | | | |
| AUSTRIAN AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| Eurofighter | 15 | | |
| Transport | | | |
| C-130K | 3 | | |
| PC-6 | 8 | | |
| Combat helicopter | | | |
| Bell 212 | 23 | | |
| OH-58 | 10 | | |
| S-70/UH-60M | 9 | 3* | |
| SA316 | 24 | | |
| Training aircraft/helicopters | | | |

| | | | |
|------------------------------------|--------|---------|--|
| PC-7 | 13 | | |
| Saab 105 | 20 | | |
| AZERBAIJAN | | | |
| AZERBAIJAN AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| MiG-21 | 5 | | |
| MiG-29 | 13 | | |
| Su-25 | 11 | | |
| Transport | | | |
| Il-76 | 1 | | |
| Combat helicopter | | | |
| Ka-32 | 4 | | |
| Mi-8/17 | 56 | 9 | |
| Mi-24 | 18 | | |
| Training aircraft/helicopters | | | |
| L-39 | 12 | | |
| Mi-2 | 7 | | |
| BAHAMAS | | | |
| ROYAL BAHAMAS DEFENCE FORCE | | | |
| Type | Active | Ordered | |
| Special mission | | | |
| King Air 350 (MPA) | 1 | | |
| Transport | | | |
| Cessna 208 | 1 | | |
| BAHRAIN | | | |
| ROYAL BAHRAINI AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| F-5E | 8 | | |
| F-16C | 17 | | |
| Combat helicopter | | | |
| AH-1E/F | 22 | | |
| Bell 212 | 18 | | |
| S-70/UH-60M | 8 | | |
| Training aircraft/helicopters | | | |
| AH-1P | 8 | | |
| BO105 | 4 | | |
| F-5F | 4 | | |
| F-16D | 4 | | |
| Hawk 129 | 6 | | |
| T67M260 | 3 | | |
| ROYAL BAHRAINI NAVY | | | |
| Type | Active | Ordered | |
| Combat helicopter | | | |
| BO105 | 2 | | |
| BANGLADESH | | | |
| BANGLADESH AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| F-7 | 37 | | |
| MiG-29 | 8 | | |
| Transport | | | |
| An-32 | 3 | | |
| C-130B/E | 4 | 4* | |
| L-410 | 3 | | |
| Combat helicopter | | | |
| AW139 | 2 | | |
| Bell 212 | 14 | | |
| Mi-17/171 | 28 | 9 | |
| Training aircraft/helicopters | | | |
| Bell 206 | 6 | | |
| FT-6 | 9 | | |
| FT-7 | 12 | | |
| K-8 | 4 | 5 | |
| L-39 | 7 | | |
| Yak-130 | 6 | 10+10* | |
| BANGLADESH ARMY | | | |
| Type | Active | Ordered | |
| Transport | | | |
| Cessna 208 | 1 | | |
| Combat helicopter | | | |
| AS365 | 2 | | |
| BANGLADESH NAVY | | | |
| Type | Active | Ordered | |
| Special mission | | | |
| Dornier 228NG (MPA) | 2 | | |
| Combat helicopter | | | |
| AW109 | 2 | | |
| Z-9 | | 2+1* | |

| | | | |
|-------------------------------|--------|---------|--|
| BELARUS | | | |
| BELARUS AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| MiG-29 | 37 | | |
| Su-25 | 68 | | |
| Transport | | | |
| An-26 | 3 | | |
| Il-76 | 2 | | |
| Combat helicopter | | | |
| Mi-8 | 24 | 12 | |
| Mi-24 | 22 | | |
| Mi-26 | 5 | | |
| Training aircraft/helicopters | | | |
| L-39 | 10 | | |
| Mi-2 | 6 | | |
| Yak-130 | 4 | 4+4* | |
| BELGIUM | | | |
| BELGIAN AIR COMPONENT | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| F-16A | 49 | | |
| Transport | | | |
| A400M | | 7 | |
| C-130H | 11 | | |
| ERJ-135/145 | 4 | | |
| Combat helicopter | | | |
| AW109 | 23 | | |
| NH90 (NFH/TTH) | 8 | 2* | |
| SA316 | 3 | | |
| Sea King 48 | 2 | | |
| Training aircraft/helicopters | | | |
| Alpha Jet | 29 | | |
| F-16B | 10 | | |
| SF-260 | 32 | | |
| BELIZE | | | |
| BELIZE DEFENCE FORCE | | | |
| Type | Active | Ordered | |
| Transport | | | |
| BN-2 | 1 | | |
| Training aircraft/helicopters | | | |
| T67M260 | 1 | | |
| BENIN | | | |
| BENIN AIR FORCE | | | |
| Type | Active | Ordered | |
| Transport | | | |
| DHC-6 | 1 | | |
| HS 748 | 1 | | |
| BHUTAN | | | |
| ROYAL BHUTAN ARMY | | | |
| Type | Active | Ordered | |
| Combat helicopter | | | |
| Mi-8 | 2 | | |
| BOLIVIA | | | |
| BOLIVIAN AIR FORCE | | | |
| Type | Active | Ordered | |
| Special mission | | | |
| Learjet 25 (Survey) | 2 | | |
| Transport | | | |
| C-130B | 3 | | |
| Jetstream 31 | 2 | | |
| King Air 90/200/350 | 6 | | |
| MA60 | | 2 | |
| Combat helicopter | | | |
| AS332 | 2 | 4 | |
| AS350 | 2 | | |
| EC145 | 3 | | |
| SA316 | 1 | | |
| UH-1H | 15 | | |
| Training aircraft/helicopters | | | |
| DA40 | 9 | | |
| Foxtrot 4 | 2 | | |
| K-8 | 6 | | |
| PC-7 | 3 | | |
| R44 | 5 | | |
| T-33 | 14 | | |
| BOLIVIAN ARMY | | | |
| Type | Active | Ordered | |
| Transport | | | |
| F27 | 1 | | |



| | | |
|--|--------|---------|
| King Air 90 | 1 | |
| Combat helicopter | | |
| Z-9 | 6 | |
| Training aircraft/helicopters | | |
| R44 | 1 | |
| BOSNIA-HERZEGOVINA | | |
| AIR FORCE BRIGADE OF BOSNIA-HERZEGOVINA | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Mi-8/17 | 6 | |
| SA341/342 | 9 | |
| UH-1H | 5 | |
| BOTSWANA | | |
| BOTSWANA DEFENCE FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F5A | 10 | |
| Transport | | |
| C-130B | 3 | |
| C212 | 2 | |
| CN235 | 2 | |
| King Air 200 | 1 | |
| Combat helicopter | | |
| AS350 | 10 | |
| Bell 412 | 6 | |
| Training aircraft/helicopters | | |
| F-5D | 3 | |
| PC-7 Mk II | 5 | |
| BRAZIL | | |
| BRAZILIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| AMX-A/T | 47 | |
| EMB-314 (A-29) | 31 | |
| F-5EM | 43 | |
| Gripen E | 28+72* | |
| Special mission | | |
| C-130E (SAR) | 1 | |
| C295 (SAR) | 2 | 3 |
| EMB-110 (Calibration) | 6 | |
| EMB-110 (MPA) | 11 | |
| EMB-110 (Recce) | 4 | |
| ERJ-145 (AEW) | 5 | |
| ERJ-145 (Recce) | 3 | |
| Hawker 800 (Calibration) | 4 | |
| Learjet 35 (Recce) | 6 | |
| Legacy 500 (Calibration) | | 6 |
| P-3AM (MPA) | 8 | |
| Tanker | | |
| 767 MMTT | | 3 |
| KC-130H/M | 2 | |
| Transport | | |
| C-130E/H/M | 12 | |
| C295 | 10 | 9* |
| Cessna 208 | 32 | |
| EMB-110 | 50 | |
| EMB-120 | 20 | |
| ERJ-145 | 6 | |
| KC-390 | | 28 |
| Combat helicopter | | |
| AS332 | 5 | |
| AS350 | 26 | |
| AS355 | 4 | |
| Bell 205 | 2 | |
| Bell 206 | 1 | |
| H225M | 5 | 11 |
| Mi-35 | 12 | |
| S-70/UH-60L/M | 16 | 3* |
| UH-1H | 22 | |
| Training aircraft/helicopters | | |
| AMX-T | 8 | |
| EMB-312 | 104 | |
| EMB-314 | 61 | |
| F-5FM | 3 | |
| Gripen F | | 8 |
| P-3AM | 1 | |
| BRAZILIAN ARMY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| AS532 | 9 | |

| | | |
|-------------------------------|--------|---------|
| AS550 | 33 | |
| AS565 | 33 | |
| CH-47F | | 8* |
| H225M | 5 | 11 |
| S-70/UH-60M | 3 | 3* |
| BRAZILIAN NAVY | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| A-4K | 3 | |
| Tanker | | |
| C-1/KC-2 | | 4 |
| Combat helicopter | | |
| AS332 | 5 | |
| AS350 | 19 | |
| AS355 | 9 | |
| Bell 206 | 17 | |
| H225M | 7 | 9 |
| Lynx 21 | 12 | |
| S-70 | 6 | 2 |
| Training aircraft/helicopters | | |
| TA-4KU | 1 | |
| BRUNEI | | |
| ROYAL BRUNEI AIR FORCE | | |
| Type | Active | Ordered |
| Transport | | |
| C-130J | | 1* |
| CN235 | 1 | |
| Combat helicopter | | |
| Bell 214 | 1 | |
| BO105 | 6 | |
| S-70i | 12 | |
| Training aircraft/helicopters | | |
| Bell 206 | 3 | |
| PC-7 Mk II | 4 | |
| BULGARIA | | |
| BULGARIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| MiG-21 | 4 | |
| MiG-29 | 15 | |
| Su-25 | 12 | |
| Special mission | | |
| An-30 (Recce) | 1 | |
| Transport | | |
| C-27J | 3 | |
| Combat helicopter | | |
| AS532 | 12 | 2* |
| Bell 206 | 2 | |
| Mi-17 | 4 | |
| Training aircraft/helicopters | | |
| Bell 206 | 4 | 2 |
| L-39 | 3 | |
| PC-9 | 5 | |
| BULGARIAN NAVY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| AS565 | 3 | |
| BURKINA FASO | | |
| BURKINA FASO AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| EMB-314 | 3 | |
| Special mission | | |
| AT-802 (Firefighting) | 1 | |
| Transport | | |
| CN235 | 1 | |
| HS 748 | 1 | |
| King Air 200 | 1 | |
| Combat helicopter | | |
| AS350 | 1 | |
| Mi-8 | 3 | |
| Mi-35 | 2 | |
| Training aircraft/helicopters | | |
| SF-260 | 4 | |
| BURUNDI | | |
| BURUNDI NATIONAL ARMY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Mi-24 | 3 | |
| SA316 | 3 | |

| | | |
|---|--------|---------|
| SA342 | 6 | |
| Training aircraft/helicopters | | |
| SF-260 | 5 | |
| CAMBODIA | | |
| ROYAL CAMBODIAN AIR FORCE | | |
| Type | Active | Ordered |
| Transport | | |
| BN-2 | 1 | |
| MA60 | 2 | |
| Y-12 | 2 | |
| Combat helicopter | | |
| AS350 | 1 | |
| AS355 | 1 | |
| Mi-8/17 | 5 | |
| Z-9 | 9 | |
| CAMEROON | | |
| CAMEROON AIR FORCE | | |
| Type | Active | Ordered |
| Transport | | |
| Arava | 1 | |
| C-130H | 3 | |
| CN235 | 1 | |
| MA60 | 1 | |
| Combat helicopter | | |
| Bell 206 | 1 | |
| Bell 412 | 1 | |
| Mi-17 | 2 | 3 |
| SA318 | 1 | |
| SA330 | 2 | |
| SA342 | 3 | |
| Z-9 | 1 | 2 |
| Training aircraft/helicopters | | |
| Alpha Jet | 5 | |
| Impala | 5 | |
| Magister | 6 | |
| CANADA | | |
| ROYAL CANADIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F/A-18A | 64 | |
| F-35A | | 65* |
| Special mission | | |
| DHC-5 (SAR) | 6 | |
| P-3 (CP-140) (MPA) | 17 | |
| Tanker | | |
| A310 | 2 | |
| KC-130H | 4 | |
| Transport | | |
| A310 | 3 | |
| C-17 | 5 | |
| C-130E/H | 9 | |
| C-130J | 17 | |
| DHC-6 | 4 | |
| King Air 200 | 2 | |
| Combat helicopter | | |
| AW101 (SAR) | 14 | |
| Bell 412 | 88 | |
| CH-47F | 15 | |
| S-61/SH-3A | 26 | |
| S-92 | 11 | 16 |
| Training aircraft/helicopters | | |
| Bell 206 (Allied Wings) | 12 | |
| Bell 412 (Allied Wings) | 9 | |
| CT-114 | 27 | |
| Dash 8 | 4 | |
| F/A-18B | 26 | |
| G120A (Allied Wings) | 13 | |
| Hawk 115 (NFTC) | 16 | |
| King Air 90 (Allied Wings) | 7 | |
| T-6A (NFTC) | 25 | |
| CENTRAL AFRICAN REPUBLIC | | |
| CENTRAL AFRICAN REPUBLIC AIR FORCE | | |
| Type | Active | Ordered |
| Transport | | |
| BN-2 | 2 | |
| Combat helicopter | | |
| AS350/550 | 2 | |
| CHAD | | |
| CHAD AIR FORCE | | |
| Type | Active | Ordered |



The Bulgarian navy's AS565 rotorcraft took part in a multinational NATO maritime exercise in the Black Sea during July 2015

| Combat aircraft | | |
|-------------------------------|--------|---------|
| MiG-29 | 1 | 2 |
| Su-25 | 8 | |
| Transport | | |
| An-26 | 3 | |
| C-27J | 2 | |
| C-130H | 1 | |
| Combat helicopter | | |
| AS550 | 6 | |
| Mi-8/17/171 | 6 | |
| Mi-24 | 5 | |
| SE3160 | 2 | |
| Training aircraft/helicopters | | |
| PC-7 | 1 | |
| PC-9 | 1 | |
| SF-260 | 1 | |
| CHILE | | |
| CHILEAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-5E | 9 | |
| F-16A/C | 35 | |
| Special mission | | |
| 707 (AEW) | 1 | |
| Learjet 35 (Survey) | 2 | |
| Tanker | | |
| KC-135E | 3 | |
| Transport | | |
| 737 | 1 | |
| C-130B/H/R | 4 | |
| C212 | 3 | |
| Citation CJ1 | 4 | |
| DHC-6 | 12 | |
| KC-390 | | 6* |
| Combat helicopter | | |
| Bell 412 | 15 | |
| UH-1H | 15 | |
| Training aircraft/helicopters | | |
| Bell 206 | 4 | |
| EMB-314 | 12 | |
| F-5F | 2 | |
| F-16B/D | 11 | |
| SR22 | 4 | |
| T-35 | 32 | |
| CHILEAN ARMY | | |
| Type | Active | Ordered |
| Transport | | |
| C212 | 2 | |
| Cessna 208 | 3 | |
| CN235 | 1 | |
| Combat helicopter | | |
| AS350 | 5 | |
| AS532 | 9 | 2+12* |
| MD530 | 9 | |
| SA330 | 3 | |
| CHILEAN NAVY | | |
| Type | Active | Ordered |
| Special mission | | |
| C295 (MPA) | 3 | 4* |

| EMB-110 (MPA) | 5 | |
|---------------------------------------|--------|---------|
| P-3A (MPA) | 3 | |
| Tecnam P68 (MPA) | 7 | |
| Transport | | |
| C295 | | 1* |
| Combat helicopter | | |
| AS332/532 | 8 | |
| AS365 | 6 | |
| BO105 | 4 | |
| Training aircraft/helicopters | | |
| Bell 206 | 6 | |
| PC-7 | 7 | |
| CHINA | | |
| PEOPLE'S LIBERATION ARMY AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| H-6 | 120 | |
| J-7 | 388 | |
| J-8 | 96 | |
| J-10 | 240 | |
| J-11/Su-27/30/35 | 272 | 24* |
| JH-7 | 71 | |
| Q-5 | 118 | |
| Special mission | | |
| 737 (MPA) | 2 | |
| An-30 (EW) | 4 | |
| Challenger 870 (Recce) | 5 | |
| Il-76 (A50I) (AEW) | 1 | |
| Il-76 (KJ-2000) (AEW) | 4 | |
| Tu-154 (EW) | 3 | |
| Y-8 (EW) | 17 | |
| Y-8 (KJ-200) (AEW) | 7 | |
| Tanker | | |
| Il-78 | 2 | |
| Transport | | |
| Il-76 | 17 | |
| MA60 | 9 | |
| Tu-154 | 6 | |
| Y-7 | 43 | |
| Y-8 | 60 | |
| Y-9 | 7 | |
| Combat helicopter | | |
| Mi-17/171 | 16 | |
| Z-8 | 34 | |
| Z-9 | 20 | |
| Training aircraft/helicopters | | |
| JJ-7 | 35 | |
| JL-8 | 170 | |
| Y-7 | 13 | |
| PEOPLE'S LIBERATION ARMY GROUND FORCE | | |
| Type | Active | Ordered |
| Transport | | |
| Y-7 | 7 | |
| Y-8 | 3 | |
| Combat helicopter | | |
| Mi-17/171 | 237 | |
| S-70 | 23 | |
| Z-8 | 51 | |
| Z-9 | 92 | |

| Z-10 | 95 | 24 |
|--------------------------------------|--------|---------|
| Z-11 | 46 | |
| Z-19 | 105 | 15 |
| Training aircraft/helicopters | | |
| AS350 | 1 | |
| H120 | 93 | 57 |
| PEOPLE'S LIBERATION ARMY NAVAL FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| H-6 | 30 | |
| J-7 | 30 | |
| J-8 | 47 | |
| J-10 | 25 | |
| J-15/Su-30/33 | 27 | 50* |
| JH-7 | 34 | |
| Q-5 | 30 | |
| Special mission | | |
| Ka-31 (AEW) | 9 | |
| SH-5 (SAR) | 3 | |
| Y-7 (SAR) | 1 | |
| Y-8 (EW, Recce) | 13 | |
| Y-8 (KJ-200) (AEW) | 8 | |
| Z-18 (AEW) | 1 | |
| Transport | | |
| Y-7 | 17 | |
| Y-8 | 12 | |
| Combat helicopter | | |
| AS365/565 | 6 | |
| Ka-27 | 1 | |
| Ka-28 | 17 | |
| Z-8 | 27 | |
| Z-9 | 29 | |
| Z-18 | 2 | |
| Training aircraft/helicopters | | |
| JJ-6 | 14 | |
| JL-8 | 11 | |
| JL-9 | 2 | |
| Mi-8 | 8 | |
| Y-7 | 5 | |
| COLOMBIA | | |
| COLOMBIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| A-37 | 7 | |
| BT-67 | 6 | |
| EMB-314 | 24 | |
| Kfir | 19 | |
| Special mission | | |
| Cessna 208 (Recce) | 6 | |
| Citation Ultra (MPA) | 5 | |
| King Air 300/350 (EW) | 4 | |
| Metro IV (EW) | 1 | |
| Turbo Commander (MPA) | 2 | |
| Tanker | | |
| 767 MMTT | 1 | |
| Transport | | |
| 727 | 2 | |
| 737 | 2 | |
| Arava | 1 | |



| | |
|---|------------------------------|
| C-130B/H | 6 |
| C212 | 4 |
| C295/CN235 | 8 |
| Cessna 208 | 10 |
| EMB-110 | 2 |
| KC-390 | 12* |
| King Air 90/350 | 8 |
| PA-31T | 1 |
| Turbo Commander | 1 |
| Combat helicopter | |
| Bell 205 | 2 |
| Bell 206 | 12 |
| Bell 212 | 10 |
| MD500/530 | 6 |
| S-70/AH/MH/UH-60L | 24 |
| UH-1H | 47 |
| Training aircraft/helicopters | |
| EMB-312 | 14 |
| Lancair T90 | 25 |
| T-37 | 17 |
| COLOMBIAN ARMY | |
| Type | Active Ordered |
| Special mission | |
| King Air 200 (EW) | 3 |
| Transport | |
| An-32 | 2 |
| C212 | 2 |
| Cessna 208 | 8 |
| King Air 90/200/350 | 4 |
| Turbo Commander | 3 |
| Combat helicopter | |
| Mi-17 | 21 |
| S-70i/UH-60L | 55 |
| UH-1H/N | 44 |
| COLOMBIAN NAVY | |
| Type | Active Ordered |
| Special mission | |
| CN235 (MPA) | 3 |
| Transport | |
| C212 | 1 |
| Cessna 208 | 3 |
| King Air 350 | 1 |
| Combat helicopter | |
| AS555 | 2 |
| Bell 212/412 | 8 |
| BK117 | 1 |
| B0105 | 2 |
| Mi-8 | 1 |
| UH-1N | 6 |
| CONGO | |
| CONGOLESE AIR FORCE | |
| Type | Active Ordered |
| Combat aircraft | |
| Mirage F1 | 2 |
| Transport | |
| An-32 | 2 |
| CN235 | 1 |
| Combat helicopter | |
| Mi-8/17 | 6 |
| Mi-24 | 3 |
| CONGOLESE NAVY | |
| Type | Active Ordered |
| Combat helicopter | |
| Mi-14 | 1 |
| CONGO (DEMOCRATIC REPUBLIC) | |
| DEMOCRATIC REPUBLIC OF CONGO AIR FORCE | |
| Type | Active Ordered |
| Combat aircraft | |
| MiG-23 | 2 |
| Su-25 | 4 |
| Transport | |
| 727 | 2 |
| An-12 | 5 |
| An-26 | 2 |
| Combat helicopter | |
| Mi-2 | 2 |
| Mi-8/17 | 4 |
| Mi-24 | 8 |
| Mi-26 | 1 |
| SA316 | 2 |

| | |
|--------------------------------------|------------------------------|
| SA330 | 10 |
| CROATIA | |
| CROATIAN AIR FORCE | |
| Type | Active Ordered |
| Combat aircraft | |
| MiG-21 | 12 |
| Special mission | |
| AT-802 (Firefighting) | 6 |
| CL-415 (Firefighting) | 6 |
| PC-9 (EW) | 3 |
| Combat helicopter | |
| Mi-8/17/171 | 23 |
| Training aircraft/helicopters | |
| Bell 206 | 8 |
| PC-9 | 10 |
| CUBA | |
| CUBAN REVOLUTIONARY AIR FORCE | |
| Type | Active Ordered |
| Combat aircraft | |
| MiG-21 | 12 |
| MiG-23 | 24 |
| MiG-29 | 3 |
| Transport | |
| An-26 | 2 |
| Combat helicopter | |
| Mi-8/17 | 10 |
| Mi-35 | 4 |
| Training aircraft/helicopters | |
| L-39 | 25 |
| CYPRUS | |
| CYPRUS NATIONAL GUARD | |
| Type | Active Ordered |
| Transport | |
| BN-2 | 1 |
| Combat helicopter | |
| AW139 | 3 |
| Mi-35 | 11 |
| SA340 | 4 |
| CZECH REPUBLIC | |
| CZECH AIR FORCE | |
| Type | Active Ordered |
| Combat aircraft | |
| Gripen C | 12 |
| L-159A | 19 |
| Transport | |
| C295 | 4 |
| KC-390 | 2* |
| L-410 | 7 |
| Yak-40 | 1 |
| Combat helicopter | |
| Mi-2 | 3 |

| | |
|--------------------------------------|------------------------------|
| Mi-17/171 | 27 |
| Mi-24/35 | 17 |
| W-3 | 10 |
| Training aircraft/helicopters | |
| Gripen D | 2 |
| L-39 | 8 |
| L-159T | 4 |
| DENMARK | |
| ROYAL DANISH AIR FORCE | |
| Type | Active Ordered |
| Combat aircraft | |
| F-16A | 35 |
| F-35A | 30* |
| Special mission | |
| Challenger 604 (MPA) | 3 |
| Transport | |
| C-130J | 4 |
| Combat helicopter | |
| AS550 | 12 |
| AW101 | 13 |
| Lynx 90 | 7 |
| S-70/MH-60R | 9 |
| Training aircraft/helicopters | |
| F-16B | 10 |
| DJIBOUTI | |
| DJIBOUTI AIR FORCE | |
| Type | Active Ordered |
| Transport | |
| Cessna 208 | 1 |
| L-410 | 1 |
| MA60 | 1 |
| Shorts 330 | 2* |
| Combat helicopter | |
| AS355 | 1 |
| Mi-8 | 2 |
| Mi-24 | 2 |
| DOMINICAN REPUBLIC | |
| DOMINICAN REPUBLIC AIR FORCE | |
| Type | Active Ordered |
| Combat aircraft | |
| EMB-314 | 8 |
| Transport | |
| C212 | 3 |
| Turbo Commander | 1 |
| Combat helicopter | |
| Bell 412 | 2 |
| OH-58 | 12 |
| UH-1H | 11 |
| Training aircraft/helicopters | |
| Schweizer 333 | 2 |
| T-35 | 4 |

Egypt became the first export recipient of the Dassault Rafale



Anthony Pecchi/Dassault

| DOMINICAN REPUBLIC ARMY | | |
|-------------------------------|--------|---------|
| Type | Active | Ordered |
| Combat helicopter | | |
| OH-58 | 8 | |
| Training aircraft/helicopters | | |
| R22 | 4 | |
| R44 | 3 | |
| ECUADOR | | |
| ECUADORIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Cheetah C | 10 | |
| Transport | | |
| 727 | 1 | |
| 737 | 1 | |
| C-130B/H/L-100 | 3 | |
| C295 | 3 | |
| DHC-6 | 3 | |
| King Air 350 | 1 | |
| Training aircraft/helicopters | | |
| Bell 206 | 8 | |
| DA20 | 11 | |
| EMB-314 | 17 | |
| T-34 | 9 | |
| ECUADORIAN ARMY AVIATION | | |
| Type | Active | Ordered |
| Transport | | |
| Arava | 3 | |
| C212 | 1 | |
| Citation II | 1 | |
| CN235 | 2 | |
| King Air 200 | 1 | |
| Combat helicopter | | |
| AS332 | 3 | |
| AS350/550 | 3 | |
| H125 | 6 | 1 |
| Mi-171 | 8 | |
| SA315 | 2 | |
| SA330 | 1 | |
| SA342 | 9 | |
| ECUADORIAN NAVY | | |
| Type | Active | Ordered |
| Special mission | | |
| CN235 (MPA) | 2 | |
| King Air 200 (MPA) | 4 | |
| Transport | | |
| King Air 300/350 | 2 | |
| Combat helicopter | | |
| Bell 206 | 4 | |
| Bell 430 | 3 | |
| Training aircraft/helicopters | | |
| Bell 206 | 1 | |
| T-35 | 3 | |
| EGYPT | | |
| EGYPTIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Alpha Jet | 15 | |
| F-4E | 34 | |
| F-7 | 60 | |
| F-16A/C | 170 | |
| MiG-21 | 54 | |
| MiG-29 | | 46* |
| Mirage 5E2/SDE/SDR | 76 | |
| Mirage 2000EM | 15 | |
| Rafale D/E | 3 | 21 |
| Special mission | | |
| Beech 1900 (Calibration) | 2 | |
| Beech 1900 (EW, Recce) | 4 | |
| E-2C (AEW) | 7 | |
| Transport | | |
| An-74 | 3 | |
| Beech 1900 | 4 | |
| C-130H | 21 | |
| C295 | 14 | 5 |
| DHC-5 | 8 | |
| King Air 200 | 1 | |
| Combat helicopter | | |
| AH-64D | 46 | |
| AW109 | 3 | |

| AW139 | 2 | |
|-------------------------------|--------|---------|
| CH-47D | 19 | 6* |
| Mi-8/17 | 60 | |
| S-70/UH-60M | 2 | 4* |
| SA342 | 90 | |
| Sea King | 23 | |
| SH-2G | 10 | |
| Training aircraft/helicopters | | |
| Alpha Jet | 30 | |
| EMB-312 | 54 | |
| F-16B/D | 50 | |
| G115 | 74 | |
| K-8 | 120 | |
| L-39/59 | 49 | |
| Mirage 5SDD | 6 | |
| Mirage 2000BM | 4 | |
| EL SALVADOR | | |
| SALVADORAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| A-37 | 15 | |
| Transport | | |
| Arava | 3 | |
| BT-67 | 1 | |
| Combat helicopter | | |
| Bell 412 | 4 | |
| MD500 | 8 | |
| Schweizer 269 | 5 | |
| UH-1H/M | 13 | |
| Training aircraft/helicopters | | |
| T-35 | 3 | |
| EQUATORIAL GUINEA | | |
| EQUATORIAL GUINEA AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Su-25 | 4 | |
| Transport | | |
| An-72 | 1 | |
| Combat helicopter | | |
| Ka-29 | 1 | |
| Mi-24 | 7 | |
| Mi-26 | 1 | |
| Training aircraft/helicopters | | |
| L-39 | 2 | |
| ERITREA | | |
| ERITREAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| MiG-29 | 5 | |
| Su-27 | 2 | |
| Transport | | |
| King Air 200 | 1 | |
| Y-12 | 4 | |
| Combat helicopter | | |
| Bell 412 | 3 | |
| Mi-17 | 4 | |
| Mi-24 | 6 | |
| Training aircraft/helicopters | | |
| M-290TP | 8 | |
| MB-339 | 5 | |
| ESTONIA | | |
| ESTONIAN AIR FORCE | | |
| Type | Active | Ordered |
| Transport | | |
| Shorts 330 | | 2* |
| Training aircraft/helicopters | | |
| L-39 | 2 | |
| R44 | 4 | |
| ETHIOPIA | | |
| ETHIOPIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| MiG-23 | 10 | |
| Su-27 | 14 | |
| Transport | | |
| 757 | 1 | |
| An-12 | 3 | |
| An-32 | 1 | |
| C-130B/E | 2 | |
| Combat helicopter | | |

| Mi-8/17 | 14 | |
|-------------------------------|--------|---------|
| Mi-24/35 | 8 | |
| SA316 | 3 | |
| Training aircraft/helicopters | | |
| L-39 | 10 | |
| SF-260 | 4 | |
| ETHIOPIAN ARMY AVIATION | | |
| Type | Active | Ordered |
| Transport | | |
| DHC-6 | 2 | |
| Combat helicopter | | |
| UH-1H | 8 | |
| FINLAND | | |
| FINNISH AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-18C | 54 | |
| Special mission | | |
| C295 (EW) | 1 | |
| F27 (EW) | 1 | |
| Transport | | |
| C295 | 2 | 4* |
| Learjet 35 | 3 | |
| PC-12NG | 6 | |
| Training aircraft/helicopters | | |
| F-18D | 7 | |
| Hawk 51/A/66 | 45 | |
| M-290TP | 9 | |
| FINNISH ARMY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| MD500 | 2 | |
| NH90 (TTH) | 20 | |
| Training aircraft/helicopters | | |
| MD500 | 5 | |
| FRANCE | | |
| FRENCH AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Mirage 2000C | 25 | |
| Mirage 2000D | 64 | |
| Mirage 2000N | 24 | |
| Mirage 2000-5 | 24 | |
| Rafale B/C | 89 | 35+96* |
| Special mission | | |
| 707 (E-3F) (AEW) | 4 | |
| C160 (ELINT) | 2 | |
| Tanker | | |
| A330 MRTT | | 1+11* |
| C/KC-135 | 14 | |
| KC-130J | | 2* |
| Transport | | |
| A310 | 3 | |
| A400M | 7 | 43 |
| C-130H | 14 | |
| C-130J | | 2* |
| C160 | 36 | |
| CN235 | 27 | |
| DHC-6 | 5 | |
| TBM 700 | 15 | |
| Combat helicopter | | |
| AS332 | 6 | |
| AS550 | 1 | |
| AS555 | 40 | |
| H225M | 11 | |
| SA330 | 27 | |
| Training aircraft/helicopters | | |
| Alpha Jet | 92 | |
| EMB-121 | 22 | |
| G120 (Airbus Defence & Space) | 18 | |
| Mirage 2000B | 5 | |
| SR20 (Airbus Defence & Space) | 13 | |
| SR22 (Airbus Defence & Space) | 7 | |
| TBM 700 | 33 | |
| FRENCH ARMY | | |
| Type | Active | Ordered |
| Transport | | |
| PC-6 | 5 | |
| TBM 700 | 8 | |
| Combat helicopter | | |



| | | |
|--------------------------------------|---------------|----------------|
| AS532 | 25 | |
| H225M | 8 | |
| NH90 (TTH) | 15 | 53 |
| SA330 | 89 | |
| SA341/342 | 181 | |
| Tiger | 48 | 31 |
| Training aircraft/helicopters | | |
| AS555 | 17 | |
| H120 (Helidax) | 37 | |
| SA330 | 1 | |
| SA341/342 | 18 | |
| FRENCH NAVY | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Rafale M | 30 | 6+10* |
| Super Etendard | 28 | |
| Special mission | | |
| ATL-2 (MPA) | 22 | |
| E-2C (AEW) | 3 | |
| Falcon 20/200 (MPA) | 5 | |
| Falcon 50 (MPA) | 6 | |
| Transport | | |
| EMB-121 | 10 | |
| Falcon 10 | 6 | |
| Combat helicopter | | |
| AS365/565 | 27 | |
| H225M | 2 | |
| Lynx HAS2/4 | 21 | |
| NH90 (NFH) | 15 | 12 |
| SA316/319/SE3160 | 22 | |
| Training aircraft/helicopters | | |
| Jetstream 41 | 2 | |
| SR22 (Airbus Defence & Space) | 3 | |
| GABON | | |
| GABON AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Mirage 5G | 3 | |
| Mirage F1 | 6 | |
| Transport | | |
| C-130H | 1 | |
| CN235 | 1 | |
| Combat helicopter | | |
| AS332 | 1 | |
| AS350 | 1 | |
| EC135 | 2 | |
| H120 | 2 | |
| SA319 | 2 | |
| SA330 | 5 | |
| SA342 | 3 | |
| Training aircraft/helicopters | | |
| Mirage 5DG | 2 | |
| T-34 | 4 | |
| GAMBIA | | |
| GAMBIA AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Su-25 | 1 | |
| Transport | | |
| AT-802 | 2 | |
| GEORGIA | | |
| GEORGIAN LAND FORCES | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Su-25 | 11 | |
| Transport | | |
| An-28 | 2 | |
| Combat helicopter | | |
| Mi-8/171 | 15 | |
| Mi-14 | 2 | |
| Mi-24 | 9 | |
| UH-1H | 12 | |
| Training aircraft/helicopters | | |
| L-29 | 4 | |
| L-39 | 4 | |
| ABKHAZIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Mi-8 | 1 | |
| Mi-24 | 2 | |



India's armed forces plan to acquire 179 of the indigenous light combat helicopter

| | | |
|--------------------------------------|---------------|----------------|
| Training aircraft/helicopters | | |
| L-39 | 5 | |
| GERMANY | | |
| GERMAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Eurofighter | 82 | 20 |
| Tornado IDS | 87 | |
| Special mission | | |
| Tornado ECR (EW) | 28 | |
| Tanker | | |
| A310 | 4 | |
| Transport | | |
| A310 | 1 | |
| A400M | 1 | 52 |
| C160 | 67 | |
| Combat helicopter | | |
| CH-53G | 81 | |
| H145M | | 15 |
| Training aircraft/helicopters | | |
| Eurofighter | 23 | 7 |
| G120 (Lufthansa) | 7 | |
| Tornado IDS | 7 | |
| GERMAN ARMY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| BO105 | 39 | |
| NH90 (TTH) | 38 | 34 |
| SE313 | 1 | |
| Tiger | 44 | 11 |
| UH-1D | 115 | |
| Training aircraft/helicopters | | |
| EC135 | 14 | |
| GERMAN NAVY | | |
| Type | Active | Ordered |
| Special mission | | |
| Dornier 228/NG (MPA/Recce) | 2 | |
| P-3C (MPA) | 8 | |
| Combat helicopter | | |
| Lynx 88 | 6 | |
| NH90 (NFH) | | 18 |
| Sea King | 21 | |
| GHANA | | |
| GHANA AIR FORCE | | |
| Type | Active | Ordered |
| Special mission | | |
| DA42 (Recce) | 2 | |
| Transport | | |
| C295 | 2 | |
| F27 | 1 | |
| Y-12 | | 2* |
| Combat helicopter | | |
| AW109 | 2 | |
| Bell 412 | 1 | |
| Mi-8/17 | 7 | 6 |

| | | |
|-------------------------------|--------|---------|
| Mi-35 | | 4* |
| Z-9 | | 4 |
| Training aircraft/helicopters | | |
| DA42 | 1 | |
| EMB-314 | | 5* |
| K-8 | 4 | |
| GREECE | | |
| HELLENIC AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F/RF-4E | 49 | |
| F-16C | 115 | |
| Mirage 2000EG | 17 | |
| Mirage 2000-5/Mk II | 25 | |
| Special mission | | |
| C-130H (EW) | 2 | |
| CL-215 (Firefighting) | 12 | |
| CL-415 (Firefighting) | 6 | |
| CL-415 (SAR) | 1 | |
| ERJ-145 (AEW) | 4 | |
| Transport | | |
| C-27J | 8 | |
| C-130B/H | 12 | |
| Combat helicopter | | |
| AS332 | 12 | |
| Bell 205 | 12 | |
| Training aircraft/helicopters | | |
| F-16D | 40 | |
| Mirage 2000BG | 2 | |
| T-2C/E | 40 | |
| T-6A | 42 | |
| HELLENIC ARMY AVIATION | | |
| Type | Active | Ordered |
| Special mission | | |
| King Air 200 (Survey) | 2 | |
| Combat helicopter | | |
| AH-64A/D | 29 | |
| Bell 205 | 27 | |
| Bell 206 | 11 | |
| CH-47D | 15 | |
| NH90 (TTH) | 11 | 9+14* |
| UH-1H | 69 | |
| Training aircraft/helicopters | | |
| Schweizer 269 | 19 | |
| HELLENIC NAVY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Bell 212 | 8 | |
| S-70 | 11 | |
| GUATEMALA | | |
| GUATEMALAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| A-37 | 3 | |
| PC-7 | 1 | |

| Transport | | |
|-------------------------------|--------|---------|
| Arava | 1 | |
| BT-67 | 3 | |
| Cessna 208 | 1 | |
| F27 | 1 | |
| King Air 90/200 | 2 | |
| Combat helicopter | | |
| Bell 205 | 1 | |
| Bell 206 | 1 | |
| Bell 212/412 | 3 | |
| UH-1H | 14 | |
| Training aircraft/helicopters | | |
| T-35 | 4 | |
| GUINEA | | |
| GUINEA AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| MiG-21 | 3 | |
| Combat helicopter | | |
| AS350 | 1 | |
| Mi-17 | 2 | |
| Mi-24/35 | 3 | |
| SA330 | 1 | |
| SA342 | 1 | |
| GUYANA | | |
| GUYANA DEFENCE FORCE | | |
| Type | Active | Ordered |
| Transport | | |
| Skyvan | 1 | |
| Y-12 | 1 | |
| Combat helicopter | | |
| Bell 206 | 2 | |
| Bell 412 | 1 | |
| HONDURAS | | |
| HONDURAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| A-37 | 9 | |
| EMB-314 | | 2* |
| F-5E | 3 | |
| Special mission | | |
| King Air 200 (MPA) | 1 | |
| Transport | | |
| Arava | 1 | |
| C-130A | 1 | |
| Cessna 208 | 1 | 1 |
| L-410 | 3 | 1 |
| Turbo Commander | 2 | |
| Combat helicopter | | |
| AS350 | 1 | |
| Bell 412 | 3 | |
| UH-1H | 5 | |
| Training aircraft/helicopters | | |
| EMB-312 | 3 | 3* |
| F-5F | 1 | |
| HUNGARY | | |
| HUNGARIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Gripen C | 11 | |
| Transport | | |
| An-26 | 4 | |
| Combat helicopter | | |
| Mi-8/17 | 14 | |
| Training aircraft/helicopters | | |
| Gripen D | 1 | |
| INDIA | | |
| INDIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Jaguar M/S | 130 | |
| MiG-21 | 245 | |
| MiG-27 | 85 | |
| MiG-29 | 66 | |
| Mirage 2000H/I | 40 | |
| Rafale B/C | | 36* |
| Su-30MKI | 200 | 53 |
| T-50 (Sukhoi) | | 144* |
| Tejas LCA | 1 | 39+40* |
| Special mission | | |

| 707 (Recce) | 1 | |
|-------------------------------|--------|---------|
| A330 (AEW) | 2* | |
| ERJ-145 (AEW) | 1 | |
| G100 Astra (Recce) | 2 | |
| Global 5000 (ELINT) | 2 | |
| Gulfstream III (EW) | 3 | |
| IL-76 (AEW) | 3 | 2 |
| Tanker | | |
| A330 MRTT | 6* | |
| IL-78 | 7 | |
| Transport | | |
| An-32 | 100 | |
| C-17 | 10 | |
| C-130J | 5 | 6+1* |
| C295 | | 56* |
| Dornier 228 | 40 | 14 |
| HS 748 | 58 | |
| IL-76 | 16 | |
| Medium Transport Aircraft | | |
| 45* | | |
| Combat helicopter | | |
| AH-64E | 22 | |
| CH-47F | | 15+7* |
| Dhruv ALH | 62 | 49 |
| Ka-226 | | 64* |
| Light Combat Helicopter | | 65 |
| Mi-8/17 | 250 | 6+48* |
| Mi-24/35 | 19 | |
| Mi-26 | 3 | |
| SA315 | 15 | 1 |
| SA316/319 | 77 | |
| Training aircraft/helicopters | | |
| Hawk 132 | 89 | 15+20* |
| HJT-16 Kiran | 81 | |
| Jaguar T | 30 | |
| Mirage 2000TH/TI | 9 | |
| PC-7 Mk II | 75 | 38* |
| Saras | | 15 |
| INDIAN ARMY AVIATION | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| AH-64E | | 11* |
| Dhruv ALH | 100 | 124 |
| Ka-226 | | 133* |
| Light Combat Helicopter | | 114 |
| SA315 | 28 | 18 |
| SA316 | 4 | |
| INDIAN NAVY | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| MiG-29 | 33 | 12 |
| Sea Harrier FRS51 | 9 | |
| Special mission | | |
| 737 (P-8) (MPA) | 8 | 16* |
| BN-2 (MPA) | 6 | |
| Dornier 228 (MPA) | 25 | 12* |
| IL-18 (MPA) | 4 | |
| Ka-31 (AEW) | 14 | |
| Tu-142 (MPA) | 8 | |
| Transport | | |
| BN-2 | 1 | |
| Saras | | 15 |
| US-2 | | 12* |
| Combat helicopter | | |
| Dhruv ALH | 8 | 16 |
| Ka-28 | 14 | 4 |
| S-61/H/UH-3H | 8 | |
| S-70 | | 24* |
| SA316/319 | 33 | 8 |
| Sea King 42 | 25 | |
| Training aircraft/helicopters | | |
| Harrier T4/60 | 3 | |
| Hawk 132 | 11 | 6 |
| HJT-16 Kiran | 20 | |
| INDONESIA | | |
| INDONESIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| EMB-314 | 8 | 8 |
| F-5E | 6 | |
| F-16A/C | 13 | 12 |

| Hawk 209 | 15 | |
|------------------------------------|--------|---------|
| Su-27/30 | 16 | |
| Special mission | | |
| 737 (MPA) | 3 | |
| CN235 (MPA) | 1 | 2 |
| Transport | | |
| C-130H/L-100 | 18 | |
| C212 | 8 | 5* |
| C295/CN235 | 14 | 1 |
| F27 | 3 | |
| PC-6 | 2 | |
| Combat helicopter | | |
| AS332 | 9 | |
| B0105 | 4 | |
| H225M | | 5+10* |
| SA330 | 11 | |
| Training aircraft/helicopters | | |
| F-5F | 3 | |
| F-16B/D | 5 | 3 |
| G120TP | 18 | |
| H120 | 10 | |
| Hawk 109 | 5 | |
| KT-1/B | 14 | 2 |
| SF-260 | 18 | |
| T-34 | 15 | |
| T-50 | 16 | |
| INDONESIAN ARMY | | |
| Type | Active | Ordered |
| Transport | | |
| BN-2 | 1 | |
| C212 | 6 | |
| Premier I | 1 | |
| Turbo Commander | 1 | |
| Combat helicopter | | |
| AH-64E | 8 | |
| AS355 | | 6 |
| AS550 | 1 | 5 |
| Bell 205 | 11 | |
| Bell 412 | 41 | |
| B0105 | 20 | |
| Mi-17 | 11 | 6 |
| Mi-35 | 5 | |
| SA316 | 7 | |
| Schweizer 269 | 14 | |
| Training aircraft/helicopters | | |
| H120 | 2 | |
| INDONESIAN NAVY | | |
| Type | Active | Ordered |
| Special mission | | |
| C212 (MPA) | 6 | |
| CN235 (MPA) | 3 | 2+3* |
| Nomad 22/24 (MPA) | 29 | |
| Transport | | |
| C212 | 9 | 1 |
| Nomad 22 | 1 | |
| Combat helicopter | | |
| AS332 | 1 | |
| AS565 | | 11 |
| Bell 412 | 3 | |
| B0105 | 8 | |
| H120 | 2 | |
| Training aircraft/helicopters | | |
| H120 | 2 | |
| IRAN | | |
| ISLAMIC REPUBLIC OF IRAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-4D/E/Rf-4E | 42 | |
| F-5E/Saegheh | 25 | |
| F-7 | 17 | |
| F-14A | 24 | |
| MiG-29 | 20 | |
| Mirage F1EQ | 9 | |
| Su-24 | 24 | |
| Special mission | | |
| 707 (EW) | 1 | |
| P-3F (MPA) | 5 | |
| Tanker | | |
| 707 | 3 | |
| 747 | 3 | |



| | | |
|--------------------------------------|---------------|----------------|
| Transport | | |
| 707 | 1 | |
| 747 | 2 | |
| C-130E/H | 31 | |
| F27 | 10 | |
| Il-76 | 5 | |
| PC-6 | 13 | |
| Combat helicopter | | |
| Bell 206 | 2 | |
| Bell 212 | 2 | |
| Training aircraft/helicopters | | |
| Bell 206 | 1 | |
| F-5B/F | 21 | |
| FT-7 | 4 | |
| Mirage F1BQ | 4 | |
| PC-7 | 35 | |
| ISLAMIC REPUBLIC OF IRAN ARMY | | |
| Type | Active | Ordered |
| Transport | | |
| F27 | 2 | |
| Turbo Commander | 1 | |
| Combat helicopter | | |
| AH-1J | 12 | |
| Bell 206 | 3 | |
| Bell 214 | 22 | |
| CH-47C | 40 | |
| ISLAMIC REPUBLIC OF IRAN NAVY | | |
| Type | Active | Ordered |
| Special mission | | |
| F27 (MPA) | 2 | |
| Falcon 20 (MPA) | 1 | |
| Transport | | |
| F27 | 1 | |
| Combat helicopter | | |
| Bell 212 | 8 | |
| Mi-171 | 5 | |
| RH-53D | 6 | |
| S-61/ASH-3D | 8 | |
| IRANIAN REVOLUTIONARY GUARD | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Su-25 | 9 | |
| Transport | | |
| An-74 | 9 | |
| Falcon 20 | 2 | |
| Il-76 | 2 | |
| Y-12 | 8 | |
| Combat helicopter | | |
| Mi-171 | 19 | |
| Training aircraft/helicopters | | |
| EMB-312 | 15 | |
| IRAQ | | |
| IRAQI AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| AT-6C | | 24* |
| Cessna AC-208 | 3 | |
| F-16C/IQ | 4 | 19 |
| L-159A | 2 | 13 |
| Su-25 | 9 | |
| Special mission | | |
| Cessna RC-208 (Recce) | 3 | |
| CH2000 (Recce) | 8 | |
| King Air 350 (Recce) | 5 | 2 |
| SB7L-360 (Recce) | 2 | |
| Transport | | |
| An-32 | 6 | |
| An-178 | | 1 |
| C-130E | 3 | |
| C-130J | 6 | |
| DHC-6 | 2 | |
| King Air 350 | 1 | |
| PC-12 | 4 | |
| Combat helicopter | | |
| Bell 412 | | 12* |
| SA342 | 6 | |
| Training aircraft/helicopters | | |
| Bell 206 | 10 | |
| Cessna 208 | 3 | |

| | | |
|--------------------------------------|---------------|----------------|
| F-16D/IQ | 5 | 7 |
| L-159T | | 2* |
| Lasta 95 | 20 | |
| T-6A | 15 | |
| T-50 | | 24 |
| IRAQI ARMY AVIATION | | |
| Type | Active | Ordered |
| Transport | | |
| An-178 | 2 | |
| Combat helicopter | | |
| Bell 407 | 25 | |
| EC635 | 24 | 1 |
| Mi-8/171 | 42 | |
| Mi-28 | 11 | 4+21* |
| Mi-35 | 14 | 12+12* |
| OH-58 | 8 | |
| UH-1H | 15 | |
| Training aircraft/helicopters | | |
| Bell 407 | 3 | |
| OH-58 | 1 | |
| IRELAND | | |
| IRISH AIR CORPS | | |
| Type | Active | Ordered |
| Special mission | | |
| BN-2 (Recce) | 1 | |
| CN235 (MPA) | 2 | |
| Combat helicopter | | |
| AW139 | 6 | |
| EC135 | 2 | |
| Training aircraft/helicopters | | |
| PC-9 | 7 | |
| ISRAEL | | |
| ISRAELI AIR AND SPACE FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-15A/C/I | 67 | |
| F-16C | 77 | |
| F-16I | 99 | |
| F-35A | | 9+41* |
| Special mission | | |
| 707 (AEW) | 1 | |
| 1124 Westwind (MPA) | 3 | |
| AT-802 (Firefighting) | 7 | 6 |
| Gulfstream G550 (AEW) | 2 | 3* |
| Gulfstream G550 (SIGINT) | 3 | |
| King Air 200 (Recce) | 25 | |
| Tanker | | |
| 707 | 9 | |
| KC-130H | 4 | |
| Transport | | |
| C-130E/H | 12 | |
| C-130J | 2 | 2+5* |
| King Air 200 | 2 | |
| Combat helicopter | | |
| AH-64A/D | 48 | |
| AS565 | 5 | |
| Bell 206 | 1 | |
| CH-53 | 23 | |
| S-70/UH-60A | 48 | |
| Training aircraft/helicopters | | |
| A-4N/TA-4H/J | 50 | |
| F-15B/D | 16 | |
| F-16A/B/D | 111 | |
| G120 (Elbit Systems) | 17 | |
| King Air 200 | 2 | |
| M-346 Lavi (TOR Systems) | 11 | 19 |
| OH-58 | 18 | |
| T-6A | 20 | |
| ITALY | | |
| ITALIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| AMX | 41 | |
| Eurofighter | 62 | 19 |
| F-35A/B | | 8+67* |
| Tornado IDS | 49 | |
| Special mission | | |
| ATL-1 (MPA) | 4 | |
| Gulfstream III (Recce) | 1 | |

| | | |
|--------------------------------------|---------------|----------------|
| Gulfstream G550 (AEW) | | 2 |
| P166 (Survey) | 3 | |
| Tornado ECR (EW) | 19 | |
| Tanker | | |
| KC-130J | 3 | |
| KC-767 | 4 | |
| Transport | | |
| C-27J | 11 | |
| C-130J | 16 | |
| P180 | 17 | |
| Combat helicopter | | |
| AW101 | 2 | 10+3* |
| AW139 | 14 | |
| Bell 212 | 32 | |
| MD500 | 2 | |
| Training aircraft/helicopters | | |
| AMX-T | 11 | |
| AW139 | 1 | |
| Eurofighter | 12 | 2 |
| M-345 | | 30* |
| M-346 | 5 | 4+6* |
| MB-339 | 72 | |
| MD500 | 44 | |
| Tornado IDS | 8 | |
| ITALIAN ARMY | | |
| Type | Active | Ordered |
| Transport | | |
| Dornier 228 | 3 | |
| P180 | 3 | |
| Combat helicopter | | |
| AW109 | 15 | |
| AW129 | 59 | |
| Bell 205 | 60 | |
| Bell 206 | 32 | |
| Bell 212/412 | 30 | |
| CH-47F | 20 | 10+4* |
| NH90 (TTH) | 30 | 29 |
| ITALIAN NAVY | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| AV-8B+ | 14 | |
| F-35B | | 15* |
| Special mission | | |
| AW101 (AEW) | 4 | |
| Transport | | |
| P180 | 3 | |
| Combat helicopter | | |
| AW101 | 15 | |
| Bell 212 | 38 | |
| NH90 (NFH) | 17 | 29 |
| S-61/ASH-3D/H | 7 | |
| Training aircraft/helicopters | | |
| TAV-8B | 2 | |
| IVORY COAST | | |
| IVORY COAST AIR FORCE | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| AS365 | 2 | |
| SA316/319 | 2 | |
| SA330 | 1 | |
| JAMAICA | | |
| JAMAICA DEFENCE FORCE | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Bell 206 | 2 | |
| Bell 407 | 3 | |
| Bell 412 | 2 | |
| Training aircraft/helicopters | | |
| DA40 | 2 | |
| JAPAN | | |
| JAPAN AIR SELF-DEFENCE FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-2A | 62 | |
| F/RF-4EJ | 71 | |
| F-15J | 154 | |
| F-35A | | 6+36* |
| Special mission | | |
| 767 (AEW) | 4 | |

| | | |
|--|---------------|----------------|
| C-1 (EW) | 1 | |
| E-2C/D (AEW) | 13 | 1+3* |
| Hawker 800 (Calibration) | 3 | |
| Hawker 800 (SAR) | 27 | |
| YS-11 (Calibration) | 4 | |
| YS-11 (EW) | 3 | |
| Tanker | | |
| KC-130H | 1 | |
| KC-767/KC-46A | 4 | 3* |
| Transport | | |
| C-1 | 25 | |
| C-2 | | 20 |
| C-130H | 15 | |
| Gulfstream IV | 5 | |
| YS-11 | 2 | |
| Combat helicopter | | |
| CH-47J | 16 | |
| S-70/UH-60J | 35 | 4+36* |
| Training aircraft/helicopters | | |
| Beechjet 400 | 13 | |
| F-2B | 16 | |
| F-15DJ | 45 | |
| T-3 | 48 | |
| T-4 | 201 | |
| YS-11 | 3 | |
| JAPAN GROUND SELF-DEFENCE FORCE | | |
| Type | Active | Ordered |
| Transport | | |
| King Air 350 | 7 | |
| MU-2 | 4 | |
| Combat helicopter | | |
| AH-1S | 71 | |
| AH-64D | 11 | 2 |
| Bell 412 (UH-X) | | 150* |
| CH-47J/JA | 61 | 5 |
| MD500 | 100 | |
| MV-22 | | 5+12* |
| OH-1 | 37 | 112* |
| S-70/UH-60JA | 36 | 1 |
| UH-1J | 130 | |
| Training aircraft/helicopters | | |
| Enstrom 480 | 30 | |
| JAPAN MARITIME SELF-DEFENCE FORCE | | |
| Type | Active | Ordered |
| Special mission | | |
| EP-3 (EW) | 4 | |
| Learjet 36 (Recce) | 4 | |
| OP-3C (Recce) | 4 | |
| P-1 (MPA) | 8 | 2+60* |
| P-3C (MPA) | 78 | |
| US-1 (SAR) | 2 | |
| US-2 (SAR) | 4 | |
| Transport | | |
| C-130R | 4 | |
| King Air 90 | 5 | |
| UP-3C/D | 3 | |
| Combat helicopter | | |
| AW101 | 8 | 6 |
| MH-53E | 8 | |
| S-70/SH/UH-60J/K | 112 | 3+2* |
| Training aircraft/helicopters | | |
| EC135 | 13 | 2* |
| King Air 90 | 27 | |
| MD500 | 7 | |
| T-3 | 41 | |
| JORDAN | | |
| ROYAL JORDANIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| AT-802 | 6 | |
| F-5E | 34 | |
| F-16A | 34 | 15 |
| Special mission | | |
| AT-802 (Recce) | | 4 |
| Transport | | |
| An-28 | 1 | |
| C-130E/H | 7 | |
| C212 | 1 | |
| C295 | 2 | |



Japan's P-1 maritime patrol aircraft appeared at the Royal International Air Tattoo

| | | |
|---|---------------|----------------|
| Cessna 208 | 6 | |
| Combat helicopter | | |
| AH-1E/F | 47 | |
| AS332 | 10 | |
| AS350 | 7 | |
| EC635 | 9 | |
| MD530/AH-6i | 7 | 24* |
| S-70/UH-60L | 10 | |
| UH-1H | 36 | |
| Training aircraft/helicopters | | |
| C-101 | 13 | |
| F-5F | 8 | |
| F-16B | 14 | |
| PC-9 | | 9 |
| R44 | | 8 |
| T67M260 | 16 | |
| JORDANIAN SPECIAL OPERATIONS COMMAND | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| AC235 | 2 | |
| KAZAKHSTAN | | |
| KAZAKHSTAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| MiG-23 | 3 | |
| MiG-27 | 12 | |
| MiG-29 | 39 | |
| MiG-31 | 32 | |
| Su-24 | 25 | |
| Su-25 | 14 | |
| Su-27/30 | 17 | 32* |
| Transport | | |
| An-12 | 1 | |
| An-24/26 | 5 | |
| An-72 | 2 | |
| C295 | 4 | 4* |
| Tu-154 | 1 | |
| Combat helicopter | | |
| EC145 | 3 | 1+21* |
| H225M | | 20* |
| Mi-8/17 | 46 | |
| Mi-24 | 18 | |
| Mi-26 | 2 | |
| Training aircraft/helicopters | | |
| L-39 | 20 | |
| Yak-130 | | 4 |
| KENYA | | |
| KENYA AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-5E | 17 | |
| Special mission | | |

| | | |
|--|---------------|----------------|
| Cessna 208 (Recce) | 1 | |
| Transport | | |
| Dash 8 | 3 | |
| DHC-5 | 5 | |
| Y-12 | 11 | |
| Combat helicopter | | |
| MD500 | 40 | |
| Mi-171 | 2 | |
| SA330 | 14 | |
| Z-9 | 6 | |
| Training aircraft/helicopters | | |
| Bulldog | 11 | |
| F-5F | 4 | |
| G120A | 6 | 6* |
| Tucano 51 | 12 | |
| KUWAIT | | |
| KUWAIT AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Eurofighter | | 28* |
| F/A-18C | 27 | |
| Tanker | | |
| KC-130J | 3 | 5* |
| Transport | | |
| C-17 | 2 | |
| L-100 | 3 | |
| Combat helicopter | | |
| AH-64D | 16 | |
| AS332 | 4 | |
| H225M | | 24* |
| S-92 | 2 | |
| SA330 | 6 | |
| SA342 | 14 | |
| Training aircraft/helicopters | | |
| F/A-18D | 7 | |
| Hawk 64 | 10 | |
| Tucano 52 | 12 | |
| KYRGYZSTAN | | |
| KYRGYZ AIR FORCE | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Mi-8 | 4 | |
| Mi-24 | 2 | |
| LAOS | | |
| LAO PEOPLE'S PEOPLE LIBERATION ARMY AIR FORCE | | |
| Type | Active | Ordered |
| Transport | | |
| An-26 | 1 | |
| MA60 | 2 | |
| Combat helicopter | | |
| Ka-32 | 2 | |
| Mi-17 | 3 | |



| | | |
|-------------------------------|--------|---------|
| Mi-26 | 1 | |
| UH-1H | 4 | |
| Z-9 | 4 | |
| LATVIA | | |
| LATVIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Mi-17 | 4 | |
| LEBANON | | |
| LEBANESE AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Cessna AC-208 | 3 | 1 |
| EMB-314 | | 6 |
| Hunter 70 | 3 | |
| Combat helicopter | | |
| S-61 | 3 | |
| SA330 | 11 | |
| SA342 | 7 | |
| UH-1H | 27 | |
| Training aircraft/helicopters | | |
| Bulldog | 3 | |
| Hunter 66 | 1 | |
| R44 | 4 | |
| LESOTHO | | |
| LESOTHO DEFENCE FORCE | | |
| Type | Active | Ordered |
| Transport | | |
| C212 | 2 | |
| Combat helicopter | | |
| Bell 206 | 1 | |
| Bell 412 | 3 | |
| B0105 | 1 | |
| EC135 | 1 | |
| LIBYA | | |
| LIBYAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| MiG-21 | 13 | |
| MiG-23 | 4 | |
| Mirage F1 | 2 | |
| Su-22 | 1 | |
| Special mission | | |
| An-32 (Recce) | 1 | |
| Transport | | |
| An-26 | 2 | |
| An-72 | 1 | |

| | | |
|-------------------------------|--------|---------|
| C-130H/L-100 | 3 | |
| C-130J | | 2* |
| Combat helicopter | | |
| AW139 | 1 | |
| CH-47C | 3 | |
| Mi-2 | 4 | |
| Mi-8/171 | 7 | |
| Mi-14 | 4 | |
| Mi-35 | 8 | |
| Training aircraft/helicopters | | |
| L-39 | 1 | |
| LIBYA DAWN | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| MiG-25 | 2 | |
| LITHUANIA | | |
| LITHUANIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| L-39 | 1 | |
| Transport | | |
| C-27J | 3 | |
| L-410 | 1 | |
| Combat helicopter | | |
| AS365 | 1 | 2 |
| Mi-8 | 3 | |
| LUXEMBOURG | | |
| LUXEMBOURG AIR FORCE | | |
| Type | Active | Ordered |
| Transport | | |
| A400M | | 1 |
| MACEDONIA | | |
| MACEDONIAN AIR FORCE | | |
| Type | Active | Ordered |
| Training aircraft/helicopters | | |
| Bell 206 | 4 | |
| MACEDONIAN ARMY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Mi-8/17 | 6 | |
| Mi-24 | 4 | |
| UH-1H | 2 | |
| MALAWI | | |
| MALAWI ARMY AIR WING | | |
| Type | Active | Ordered |
| Transport | | |
| Domier 228 | 3 | |

| | | |
|--|--------|---------|
| Combat helicopter | | |
| AS350/550 | 2 | |
| AS355 | 1 | |
| AS532 | 1 | |
| SA330 | 2 | |
| MALAYSIA | | |
| ROYAL MALAYSIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F/A-18D | 8 | |
| F/RF-5E | 6 | |
| Hawk 208 | 13 | |
| MiG-29 | 10 | |
| Su-30 | 18 | |
| Special mission | | |
| King Air 200 (MPA) | 4 | |
| Tanker | | |
| KC-130H | 4 | |
| Transport | | |
| A400M | 1 | 3 |
| C/PC-130H | 10 | |
| CN235 | 6 | |
| Combat helicopter | | |
| H225M | 12 | |
| S-61 | 27 | |
| SA316 | 15 | |
| Training aircraft/helicopters | | |
| F-5F | 3 | |
| Hawk 108 | 6 | |
| King Air 350 | 2 | |
| MB-339 | 8 | |
| PC-7/Mk II | 49 | 12* |
| ROYAL MALAYSIAN ARMY AIR CORPS | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| AW109 | 11 | |
| S-61 | 2 | |
| ROYAL MALAYSIAN NAVY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| AS555 | 6 | |
| Super Lynx 100 | 6 | |
| MALDIVES | | |
| MALDIVES NATIONAL DEFENCE FORCE | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Dhruv ALH | 2 | |



The Royal Malaysian Air Force's first A400M was flown alongside Hawk trainers and strike aircraft at the LIMA exhibition

| MALI | | | |
|--------------------------------|--------|---------|--|
| MALI AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| MiG-21 | 9 | | |
| Special mission | | | |
| F406 Caravan II (MPA) | | 3* | |
| Transport | | | |
| BN-2 | 1 | | |
| Combat helicopter | | | |
| Mi-24 | 3 | | |
| Training aircraft/helicopters | | | |
| EMB-314 | 6 | | |
| SF-260 | 2 | | |
| MALTA | | | |
| ARMED FORCES OF MALTA AIR WING | | | |
| Type | Active | Ordered | |
| Special mission | | | |
| BN-2 (MPA) | 1 | | |
| King Air 200 (MPA) | 2 | 1 | |
| Combat helicopter | | | |
| AW139 | 2 | 1 | |
| SA316 | 3 | | |
| MAURITANIA | | | |
| MAURITANIAN AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| EMB-314 | 2 | 2 | |
| Special mission | | | |
| BN-2 (MPA) | 3 | | |
| Cessna 208 (MPA) | 2 | 1 | |
| PA-31T (MPA) | 2 | | |
| Transport | | | |
| BT-67 | 1 | | |
| Cessna 441 Conquest II | 1 | | |
| PC-6 | 1 | | |
| Y-12 | 1 | | |
| Combat helicopter | | | |
| AW109 | 2 | | |
| Z-9 | 2 | | |
| Training aircraft/helicopters | | | |
| EMB-312 | 5 | | |
| SF-260 | 4 | | |
| MEXICO | | | |
| MEXICAN AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| F-5E | 6 | | |
| PC-7 | 36 | | |
| Special mission | | | |
| ERJ-145 (AEW) | 1 | | |
| ERJ-145 (Recce) | 2 | | |
| Metro III (Recce) | 3 | | |
| Transport | | | |
| 727 | 5 | | |
| 737 | | 2* | |
| C-27J | 4 | | |
| C-130E/K/L-100 | 6 | | |
| C-130J | | 2* | |
| C295 | 8 | 2* | |
| King Air 90/300/350 | 7 | | |
| PC-6 | 3 | | |
| Turbo Commander | 5 | | |
| Combat helicopter | | | |
| AW109 | 2 | | |
| Bell 206 | 20 | | |
| Bell 212/412 | 31 | | |
| Bell 407 | 11 | 4 | |
| H225M | 11 | 6 | |
| MD530 | 15 | | |
| Mi-8/17 | 27 | 3 | |
| S-70/UH-60M | 4 | 29 | |
| UH-1H | 1 | | |
| Training aircraft/helicopters | | | |
| Bell 206 | 11 | | |
| F-5F | 2 | | |
| G120TP | 13 | 12+15* | |
| PC-7 | 30 | | |
| PC-9 | 2 | | |
| SF-260 | 25 | | |

Morocco's F-16s saw combat action – and losses – over Yemen during 2015



Peter Foster

| T-6C+ | 11 | | |
|-------------------------------|--------|---------|--|
| MEXICAN NAVY | | | |
| Type | Active | Ordered | |
| Special mission | | | |
| C212 (MPA) | 8 | 1* | |
| CN235 (MPA) | 2 | | |
| Transport | | | |
| C295 | 6 | | |
| Dash 8 | 1 | | |
| King Air 350 | 6 | 2 | |
| Turbo Commander | 4 | | |
| Combat helicopter | | | |
| AS555 | 2 | | |
| AS565 | 3 | 10 | |
| BO105 | 5 | | |
| H225M | 3 | | |
| MD900 | 5 | | |
| Mi-17 | 21 | | |
| S-70/UH-60M | 3 | 5 | |
| Training aircraft/helicopters | | | |
| Lancair Super ES | 1 | | |
| Legacy 2000 | 2 | | |
| M-290TP | 5 | | |
| MD500 | 3 | | |
| R22 | 1 | | |
| R44 | 1 | | |
| Schweizer 269 | 4 | | |
| Schweizer 333 | 10 | | |
| T-6C+ | 2 | | |
| MOLDOVA | | | |
| MOLOVAN AIR FORCE | | | |
| Type | Active | Ordered | |
| Transport | | | |
| An-26 | 1 | | |
| TRANSNISTRIAN AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat helicopter | | | |
| Mi-2 | 1 | | |
| Mi-8 | 1 | | |
| MONGOLIA | | | |
| MONGOLIAN AIR FORCE | | | |
| Type | Active | Ordered | |
| Transport | | | |
| An-26 | 3 | | |
| Combat helicopter | | | |
| Mi-8/171 | 7 | | |
| MONTENEGRO | | | |
| MONTENEGRO ARMY | | | |
| Type | Active | Ordered | |
| Combat helicopter | | | |
| SA341/342 | 5 | | |
| MOROCCO | | | |
| ROYAL MOROCCAN AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| F-5E | 22 | | |
| F-16C | 13 | | |
| Mirage F1 | 15 | | |
| Special mission | | | |

| CL-415 (Firefighting) | 5 | | |
|-------------------------------|--------|---------|--|
| Falcon 20 (EW) | 2 | | |
| King Air 200 (Research) | 1 | | |
| Tanker | | | |
| KC-130H | 2 | | |
| Transport | | | |
| C-27J | 4 | | |
| C-130H | 13 | | |
| CN235 | 6 | | |
| King Air 200/300/350 | 7 | | |
| Combat helicopter | | | |
| Bell 205 | 47 | | |
| Bell 206 | 5 | | |
| Bell 212/412 | 4 | | |
| CH-47D | 3 | | |
| SA330 | 26 | | |
| SA342 | 23 | | |
| Training aircraft/helicopters | | | |
| Alpha Jet | 24 | | |
| Bell 206 | 17 | | |
| F-5F | 4 | | |
| F-16D | 8 | | |
| King Air 100 | 4 | | |
| T-6C | 24 | | |
| ROYAL MOROCCAN NAVY | | | |
| Type | Active | Ordered | |
| Combat helicopter | | | |
| AS565 | 3 | | |
| MOZAMBIQUE | | | |
| MOZAMBIQUE AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| MiG-21 | 8 | | |
| Transport | | | |
| An-26 | 1 | | |
| Combat helicopter | | | |
| Mi-8 | 2 | | |
| Mi-25 | 2 | | |
| Training aircraft/helicopters | | | |
| EMB-312 | | 3 | |
| L-39 | 1 | | |
| MYANMAR | | | |
| MYANMAR AIR FORCE | | | |
| Type | Active | Ordered | |
| Combat aircraft | | | |
| A-5 | 21 | | |
| F-6 | 1 | | |
| F-7 | 24 | | |
| MiG-29 | 31 | | |
| Special mission | | | |
| BN-2 (MPA) | 5 | | |
| Transport | | | |
| ATR 42 | 1 | | |
| Beech 1900 | 3 | | |
| F27 | 2 | | |
| FH-227 | 2 | | |
| PC-6 | 5 | | |
| Y-8 | 4 | | |
| Y-12 | 2 | | |



| COMBAT HELICOPTER | | |
|--|--------|---------|
| Bell 205 | 14 | |
| Mi-2 | 22 | |
| Mi-8/17 | 12 | |
| Mi-35 | 9 | |
| SA316/SE3160 | 13 | |
| W-3 | 12 | |
| TRAINING AIRCRAFT/HELICOPTERS | | |
| FT-7 | 6 | |
| G-4 | 4 | |
| G120TP | 10 | 10 |
| K-8 | 12 | 50 |
| PC-7 | 16 | |
| PC-9 | 10 | |
| UNITED WA STATE ARMY | | |
| Type | Active | Ordered |
| COMBAT HELICOPTER | | |
| Mi-17 | 5 | |
| NAMIBIA | | |
| NAMIBIAN AIR FORCE | | |
| Type | Active | Ordered |
| COMBAT AIRCRAFT | | |
| F-7 | 6 | |
| TRANSPORT | | |
| An-26 | 1 | |
| Y-12 | 2 | |
| COMBAT HELICOPTER | | |
| Mi-8 | 2 | |
| Mi-24 | 2 | |
| SA315 | 1 | |
| SA316 | 3 | |
| Z-9 | 1 | |
| TRAINING AIRCRAFT/HELICOPTERS | | |
| FT-7 | 2 | |
| K-8 | 12 | |
| NATO | | |
| NATO | | |
| Type | Active | Ordered |
| SPECIAL MISSION | | |
| 707 (E-3A) (AEW) | 16 | |
| TANKER | | |
| A330 MRTT (European Defence Agency) | 4* | |
| TRANSPORT | | |
| C-17 (Strategic Airlift Consortium) | 3 | |
| NEPAL | | |
| NEPAL ARMY AIR WING | | |
| Type | Active | Ordered |
| TRANSPORT | | |
| An-28 | 2 | |
| BN-2 | 1 | |
| HS 748 | 1 | |
| COMBAT HELICOPTER | | |
| AS350 | 1 | |
| Dhruv ALH | 4 | |
| Mi-17 | 6 | |
| SA315 | 2 | |
| SA316/319 | 4 | |
| SA330 | 1 | |
| NETHERLANDS | | |
| ROYAL NETHERLANDS AIR FORCE | | |
| Type | Active | Ordered |
| COMBAT AIRCRAFT | | |
| F-16A | 66 | |
| F-35A | 83* | |
| TANKER | | |
| KDC-10 | 2 | |
| TRANSPORT | | |
| C-130H | 4 | |
| TRAINING AIRCRAFT/HELICOPTERS | | |
| F-16B | 9 | |
| F-35A | 2 | |
| PC-7 | 13 | |
| NETHERLANDS DEFENCE HELICOPTER COMMAND | | |
| Type | Active | Ordered |
| COMBAT HELICOPTER | | |
| AH-64D | 27 | |
| AS532 | 11 | |
| CH-47D/F | 17 | 17* |
| NH90 (NFH) | 13 | 3 |
| NEW ZEALAND | | |

| ROYAL NEW ZEALAND AIR FORCE | | |
|--------------------------------|--------|---------|
| Type | Active | Ordered |
| SPECIAL MISSION | | |
| P-3K (MPA) | 6 | |
| TRANSPORT | | |
| 757 | 2 | |
| C-130H | 4 | |
| COMBAT HELICOPTER | | |
| AW109 | 5 | 3* |
| NH90 (TTH) | 8 | |
| SH-2G | 11 | |
| TRAINING AIRCRAFT/HELICOPTERS | | |
| King Air 200 | 4 | |
| T-6C | 11 | |
| NICARAGUA | | |
| NICARAGUAN AIR FORCE | | |
| Type | Active | Ordered |
| TRANSPORT | | |
| An-26 | 2 | |
| King Air 90 | 1 | |
| COMBAT HELICOPTER | | |
| Bell 206 | 1 | |
| MD500 | 2 | |
| Mi-17/171 | 14 | |
| TRAINING AIRCRAFT/HELICOPTERS | | |
| R44 | 1 | |
| NIGER | | |
| NIGER AIR FORCE | | |
| Type | Active | Ordered |
| COMBAT AIRCRAFT | | |
| Su-25 | 2 | |
| SPECIAL MISSION | | |
| Cessna 208 (Recce) | 2 | |
| DA42 (Recce) | 2 | |
| TRANSPORT | | |
| C-130H | 1 | |
| Cessna 208 | 2 | |
| Domier 228 | 1 | |
| COMBAT HELICOPTER | | |
| Mi-17 | 3 | |
| Mi-24 | 1 | |
| SA342 | 3 | |
| NIGERIA | | |
| NIGERIAN AIR FORCE | | |
| Type | Active | Ordered |
| COMBAT AIRCRAFT | | |
| Alpha Jet | 12 | |
| F-7 | 10 | |
| SPECIAL MISSION | | |
| ATR 42 (MPA) | 2 | |
| TRANSPORT | | |
| C-130H | 3 | |
| Domier 128 | 11 | |
| Domier 228 | 5 | |
| G222 | 2 | |
| King Air 350 | 3 | |
| COMBAT HELICOPTER | | |
| AS332 | 5 | |
| AW139 | 1 | |
| Mi-17/171 | 5 | 6 |
| Mi-24/35 | 9 | 6 |
| TRAINING AIRCRAFT/HELICOPTERS | | |
| AW109 | 13 | |
| FT-7 | 2 | |
| L-39 | 17 | |
| NIGERIAN NAVY | | |
| Type | Active | Ordered |
| COMBAT HELICOPTER | | |
| AW109 | 4 | |
| Bell 206 | 1 | |
| NORTH KOREA | | |
| KOREAN PEOPLE'S ARMY AIR FORCE | | |
| Type | Active | Ordered |
| COMBAT AIRCRAFT | | |
| F-5 (Shenyang) | 106 | |
| F-6 | 97 | |
| F-7 | 120 | |
| H-5 | 80 | |
| MiG-21 | 26 | |
| MiG-23 | 56 | |

| MiG-29 | 35 | |
|-------------------------------|--------|---------|
| Su-7 | 18 | |
| Su-25 | 34 | |
| TRANSPORT | | |
| An-24 | 1 | |
| COMBAT HELICOPTER | | |
| MD500 | 84 | |
| Mi-2 | 46 | |
| Mi-8 | 40 | |
| Mi-14 | 8 | |
| Mi-24 | 20 | |
| Mi-26 | 4 | |
| TRAINING AIRCRAFT/HELICOPTERS | | |
| FT-2 | 30 | |
| FT-5 | 135 | |
| MiG-15 | 4 | |
| NORWAY | | |
| ROYAL NORWEGIAN AIR FORCE | | |
| Type | Active | Ordered |
| COMBAT AIRCRAFT | | |
| F-16A | 46 | |
| F-35A | 6+42* | |
| SPECIAL MISSION | | |
| Falcon 20 (EW) | 2 | |
| P-3C/N (MPA) | 6 | |
| TRANSPORT | | |
| C-130J | 4 | 1* |
| COMBAT HELICOPTER | | |
| AW101 | 16+6* | |
| Bell 412 | 18 | |
| NH90 (NFH) | 5 | 9 |
| Sea King 43 | 11 | |
| TRAINING AIRCRAFT/HELICOPTERS | | |
| F-16B | 10 | |
| F-35A | 2 | 2 |
| OMAN | | |
| ROYAL AIR FORCE OF OMAN | | |
| Type | Active | Ordered |
| COMBAT AIRCRAFT | | |
| Eurofighter | 12+12* | |
| F-16C | 17 | |
| Hawk 203 | 10 | |
| SPECIAL MISSION | | |
| C295 (MPA) | 2 | 1 |
| Skyvan (MPA) | 3 | |
| TRANSPORT | | |
| C-130H | 3 | |
| C-130J | 3 | |
| C295 | 4 | 1 |
| COMBAT HELICOPTER | | |
| AS332 | 2 | |
| Bell 205 | 5 | |
| Bell 206 | 4 | |
| NH90 (TTH) | 17 | 2 |
| SA330 | 2 | |
| Super Lynx 120 | 15 | |
| TRAINING AIRCRAFT/HELICOPTERS | | |
| F-16D | 6 | |
| Hawk 103/166 | 4 | 8 |
| PC-9 | 12 | |
| PAKISTAN | | |
| PAKISTAN AIR FORCE | | |
| Type | Active | Ordered |
| COMBAT AIRCRAFT | | |
| F-7 | 140 | |
| F-16A/C | 46 | |
| JF-17 | 49 | 50+50* |
| Mirage IIIEP/OF/RP | 69 | |
| Mirage 5EF/F/PA | 90 | |
| SPECIAL MISSION | | |
| Falcon 20 (EW) | 2 | |
| King Air 350 (Recce) | 4 | |
| Saab 2000 (AEW) | 4 | |
| Y-8 (ZDK-03) (AEW) | 3 | 1 |
| TANKER | | |
| Il-78 | 4 | |
| TRANSPORT | | |
| C-130B/E/L-100 | 16 | |
| CN235 | 3 | |
| Saab 2000 | 1 | |

| | | |
|--------------------------------------|--------|---------|
| Y-12 | 3 | |
| Combat helicopter | | |
| AH-1F | 1 | |
| Bell 205 | 5 | |
| Bell 412 | 1 | |
| Mi-171 | 6 | |
| SA330 | 1 | |
| SE3160 | 10 | |
| Training aircraft/helicopters | | |
| F-16B/D | 31 | |
| FT-5 | 25 | |
| FT-6 | 9 | |
| FT-7 | 9 | |
| K-8 | 38 | |
| Mirage IIIBE/D/DP | 18 | |
| Mirage 5DPA2 | 2 | |
| SA316 | 8 | |
| T-37 | 18 | 34 |
| PAKISTAN ARMY | | |
| Type | Active | Ordered |
| Transport | | |
| Challenger 605 | 1 | |
| Citation Bravo | 1 | |
| King Air 350 | 1 | |
| Turbo Commander | 2 | |
| Y-12 | 4 | |
| Combat helicopter | | |
| AH-1F | 48 | |
| AH-1Z | | 15 |
| AS550 | 17 | |
| Bell 206 | 19 | |
| Bell 412 | 32 | 2 |
| H125 | 6 | 4 |
| Mi-17/171 | 46 | |
| Mi-35 | | 4 |
| SA315 | 18 | |
| SA316 | 14 | |
| SA330 | 45 | |
| UH-1H | 1 | |
| Z-10 | 3 | |
| Training aircraft/helicopters | | |
| Schweizer 269 | 12 | |
| PAKISTAN NAVY | | |
| Type | Active | Ordered |
| Special mission | | |
| F27 (MPA) | 7 | |
| Hakwer 850 (Recce) | 1 | |
| P-3C (MPA) | 6 | |
| Transport | | |
| ATR 72 | 2 | |
| Combat helicopter | | |
| Mi-14 | 2 | |
| SA316/319 | 7 | |
| Sea King 45 | 6 | |
| Z-9 | 6 | |

| | | |
|--|--------|---------|
| PANAMA | | |
| NATIONAL AERONAUTICAL SERVICE OF PANAMA | | |
| Type | Active | Ordered |
| Transport | | |
| C212 | 3 | |
| Cessna 208 | 3 | |
| Combat helicopter | | |
| AW139 | 5 | |
| Bell 205 | 1 | |
| Bell 212/412 | 5 | |
| Bell 407 | 1 | |
| EC145 | 1 | |
| MD500 | 1 | |
| Training aircraft/helicopters | | |
| T-35 | 4 | |
| PAPUA NEW GUINEA | | |
| PAPUA NEW GUINEA DEFENCE FORCE | | |
| Type | Active | Ordered |
| Transport | | |
| Arava | 3 | |
| CN235 | 2 | |
| PARAGUAY | | |
| PARAGUAYAN AIR FORCE | | |
| Type | Active | Ordered |
| Transport | | |
| C212 | 4 | |
| Cessna 208 | 2 | |
| Combat helicopter | | |
| AS350 | 3 | |
| UH-1H | 9 | |
| Training aircraft/helicopters | | |
| EMB-312 | 6 | |
| T-35 | 10 | |
| PARAGUAYAN NAVY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| AS350 | 1 | |
| PERU | | |
| PERUVIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| A-37 | 24 | |
| MiG-29 | 19 | |
| Mirage 2000P | 7 | |
| Su-25 | 18 | |
| Special mission | | |
| Learjet 36 (Recce) | 1 | |
| Metro 23 (Recce) | 2 | |
| Transport | | |
| 737 | 1 | |
| An-32 | 3 | |
| C-27J | 2 | 2+8* |
| DHC-6 | 15 | 3* |
| L-100 | 2 | |
| Learjet 36 | 1 | |

| | | |
|--------------------------------------|--------|---------|
| Metro 23 | 1 | |
| PC-6 | 1 | |
| Combat helicopter | | |
| Bell 212/412 | 3 | |
| B0105 | 2 | |
| Mi-8/17 | 11 | 8* |
| Mi-25/35 | 16 | |
| Training aircraft/helicopters | | |
| EMB-312 | 17 | |
| KT-1 | 8 | 12 |
| MB-339 | 5 | |
| Mirage 2000DP | 2 | |
| Schweizer 269 | 6 | |
| PERUVIAN ARMY | | |
| Type | Active | Ordered |
| Transport | | |
| An-28 | 2 | |
| An-32 | 3 | |
| Beech 1900 | 1 | |
| Cessna 208 | 1 | |
| Citation XLS | 1 | |
| King Air 350 | 1 | |
| PA-31T | 1 | |
| Combat helicopter | | |
| AW109 | 2 | |
| Mi-8/17/171 | 32 | |
| Training aircraft/helicopters | | |
| Enstrom F-28/280 | 6 | |
| R44 | 1 | |
| PERUVIAN NAVY | | |
| Type | Active | Ordered |
| Special mission | | |
| F60 (MPA) | 2 | |
| King Air 200 (MPA) | 3 | |
| Transport | | |
| An-32 | 2 | |
| DHC-6 | | 3 |
| F50 | 2 | |
| F60 | 2 | |
| Combat helicopter | | |
| Bell 206 | 2 | |
| Bell 212 | 2 | |
| Mi-8/171 | 2 | 5* |
| S-61/ASH-3D | 5 | |
| Training aircraft/helicopters | | |
| Enstrom F-28 | 4 | |
| T-34 | 2 | |
| PHILIPPINES | | |
| PHILIPPINE AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| FA-50 | | 12 |
| OV-10 | 8 | |
| Transport | | |
| C-130B/H | 3 | |
| C295 | 2 | 1 |
| F27 | 1 | |
| NC212i | | 2 |
| Nomad 22 | 1 | |
| Shorts 330 | | 2* |
| Turbo Commander | 1 | |
| Combat helicopter | | |
| AS550 | | 4 |
| AW109 | 2 | 6 |
| Bell 205 | 8 | |
| Bell 212/412 | 7 | |
| MD520 | 25 | |
| S-76 | 9 | |
| UH-1D/H | 28 | |
| W-3 | 7 | |
| Training aircraft/helicopters | | |
| S-211 | 3 | |
| SF-260 | 19 | |
| PHILIPPINE ARMY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Bell 412 | | 5 |
| PHILIPPINE NAVAL AVIATION | | |
| Type | Active | Ordered |
| Transport | | |

Norway's first two F-35As have touched down at Luke AFB in Arizona for pilot training





| | | |
|-------------------------------|--------|---------|
| BN-2 | 6 | |
| Combat helicopter | | |
| AW109 | 5 | |
| POLAND | | |
| POLISH AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-16C | 36 | |
| MiG-29 | 31 | |
| Su-22 | 32 | |
| Transport | | |
| An-28 | 24 | |
| C-130E | 5 | |
| C295 | 16 | |
| Combat helicopter | | |
| H225M | 21* | |
| Mi-2 | 17 | |
| Mi-8/17 | 12 | |
| W-3 | 17 | |
| Training aircraft/helicopters | | |
| Cabri G2 | 4 | |
| F-16D | 12 | |
| M-346 | 8+4* | |
| PZL-130 | 17 | |
| SW-4 | 24 | |
| TS-11 | 37 | |
| POLISH LAND FORCES | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| H225M | 21* | |
| Mi-2 | 43 | |
| Mi-8/17 | 26 | |
| Mi-24 | 29 | |
| W-3 | 39 | |
| Training aircraft/helicopters | | |
| Mi-2 | 1 | |
| POLISH NAVAL AIR ARM | | |
| Type | Active | Ordered |
| Special mission | | |
| An-28 (MPA) | 9 | |
| Transport | | |
| An-28 | 4 | |
| Combat helicopter | | |
| H225M | 8* | |
| Mi-2 | 4 | |
| Mi-8/17 | 2 | |
| Mi-14 | 9 | |
| SH-2G | 4 | |
| W-3 | 7 | |
| PORTUGAL | | |
| PORTUGUESE AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-16A | 33 | |
| Special mission | | |
| C295 (MPA) | 5 | |
| P-3C (MPA) | 5 | |
| Transport | | |
| C-130H | 5 | |
| C295 | 7 | |
| KC-390 | 6* | |
| Combat helicopter | | |
| AW101 | 12 | |
| SA316 | 8 | |
| Training aircraft/helicopters | | |
| Alpha Jet | 9 | |
| F-16B | 5 | |
| TB30 | 16 | |
| PORTUGUESE NAVY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Lynx 95 | 5 | |
| QATAR | | |
| QATAR EMIRI AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Alpha Jet | 6 | |
| Mirage 2000-5EDA | 9 | |
| Rafale B/C | 18+12* | |
| Special mission | | |

| | | |
|-------------------------------|--------|---------|
| 737 (AEW) | 3* | |
| Tanker | | |
| A330 MRTT | 2* | |
| Transport | | |
| C-17 | 4 | 4 |
| C-130J | 4 | |
| Combat helicopter | | |
| AH-64E | 24 | |
| AW139 | 21 | |
| NH90 (NFH/TTH) | 22 | |
| SA342 | 13 | |
| Sea King | 11 | |
| Training aircraft/helicopters | | |
| Mirage 2000-5DDA | 4 | |
| PC-21 | 14 | 10 |
| Rafale B | 6 | |
| ROMANIA | | |
| ROMANIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-16A | 9 | |
| MiG-21 | 26 | |
| Special mission | | |
| An-30 (Recce) | 2 | |
| Transport | | |
| C-27J | 7 | |
| C-130H | 4 | |
| Combat helicopter | | |
| SA/IAR330 | 59 | |
| Training aircraft/helicopters | | |
| F-16B | 3 | |
| IAR-99 | 19 | |
| SA316 | 5 | |
| ROMANIAN NAVY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| IAR330 | 3 | |
| RUSSIA | | |
| RUSSIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| MiG-29/35 | 252 | 16+37* |
| MiG-31 | 135 | |
| Su-24 | 277 | |
| Su-25 | 199 | |
| Su-27/30 | 321 | 50 |
| Su-34 | 61 | 62+16* |
| T-50 (Sukhoi) | 1 | 60* |
| Tu-22M | 70 | |
| Tu-95 | 41 | |
| Tu-160 | 13 | 50* |
| Special mission | | |
| An-12 (Recce) | 5 | |
| An-12 (Weather Research) | 1 | |
| An-26 (Calibration) | 5 | |
| An-26 (Recce) | 2 | |
| An-30 (Recce) | 14 | |
| Il-20/22 (Recce) | 19 | |
| Il-20/22 (Space Tracking) | 11 | |
| Il-76 (A50) (AEW) | 13 | |
| Il-82 (Command Post) | 2 | |
| Il-87 (Command Post) | 4 | |
| Tu-134 (Recce) | 1 | |
| Tu-204 (EW) | 2 | |
| Tanker | | |
| Il-78 | 19 | 31* |
| Il-96 | 2 | |
| Transport | | |
| An-12 | 54 | |
| An-22 | 5 | |
| An-26 | 102 | |
| An-30 | 1 | |
| An-72 | 26 | |
| An-124 | 2 | |
| An-140 | 3 | 5 |
| An-148 | 4 | 11 |
| Il-18 | 4 | |
| Il-76 | 91 | 37+9* |
| Il-96 | 10* | |
| Il-112 | 62* | |

| | | |
|-------------------------------|--------|---------|
| L-410 | 23 | |
| Medium Transport Aircraft | 100* | |
| Tu-134 | 5 | |
| Tu-154 | 3 | |
| Tu-204 | 2 | |
| Combat helicopter | | |
| AS355 | 2 | |
| H125 | 3 | |
| Ka-27 | 7 | |
| Ka-52 | 74 | 82+25* |
| Ka-62 | 16+84* | |
| Ka-226 | 31 | 5 |
| Mi-8/17 | 559 | 110 |
| Mi-24/35 | 323 | 2 |
| Mi-26 | 42 | 5+16* |
| Mi-28 | 81 | 14 |
| Training aircraft/helicopters | | |
| Ansats | 31 | 5 |
| L-39 | 201 | |
| Mi-2 | 19 | |
| Mi-28 | 60* | |
| Tu-134 | 33 | |
| Yak-130 | 81 | 20 |
| Yak-152 | 150* | |
| RUSSIAN NAVY | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| MiG-29/K | 14 | 10 |
| Su-24 | 22 | |
| Su-25 | 4 | |
| Su-30/33 | 28 | 5+38* |
| Special mission | | |
| An-12 (SAR) | 3 | |
| An-26 (Calibration) | 2 | |
| Be-12 (SAR) | 6 | |
| Be-200 (SAR) | 4 | |
| Il-20/22 (EW, Recce) | 3 | |
| Il-38 (MPA) | 19 | |
| Ka-31 (AEW) | 3 | |
| Tu-142 (MPA) | 24 | |
| Transport | | |
| An-12 | 2 | |
| An-24/26 | 25 | |
| An-72 | 6 | |
| An-140 | 3 | 2 |
| Be-200 | 2+2* | |
| Il-18 | 1 | |
| Tu-134 | 2 | |
| Tu-154 | 1 | |
| Combat helicopter | | |
| Ka-27 | 82 | |
| Ka-28 | 2 | |
| Ka-29 | 3 | |
| Ka-52 | 28 | |
| Mi-8 | 9 | |
| Training aircraft/helicopters | | |
| Il-18 | 1 | |
| Tu-134 | 4 | |
| Yak-130 | 5+5* | |
| RWANDA | | |
| RWANDAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Mi-17 | 12 | |
| Mi-24 | 5 | |
| SA342 | 4 | |
| SAUDI ARABIA | | |
| ROYAL SAUDI AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Eurofighter | 35 | 19 |
| F-15C/S/SA | 129 | 84 |
| Tornado IDS | 81 | |
| Special mission | | |
| 707 (E-3A) (AEW) | 5 | |
| 707 (RE-3A) (SIGINT) | 1 | |
| An-132 (EW, Recce) | 6* | |
| King Air 350 (EW) | 2 | 7* |
| Saab 2000 (AEW) | 2 | |
| Tanker | | |



Russia deployed Su-24 combat aircraft within Syria. Its air force has almost 280 in use

| | | |
|--------------------------------------|----|------|
| 707 (KE-3A) | 7 | |
| A330 MRTT | 4 | |
| KC-130H | 7 | |
| KC-130J | | 2+3* |
| Transport | | |
| C-130H | 33 | |
| C-130J | | 20* |
| Citation Bravo | 4 | |
| CN235 | 2 | |
| Gulfstream IV | 1 | |
| Jetstream 31 | 1 | |
| King Air 350 | 10 | |
| Combat helicopter | | |
| AS532 | 11 | |
| Bell 212/412 | 36 | |
| S-70/UH-60L | | 2 |
| Training aircraft/helicopters | | |
| Eurofighter | 18 | |
| F-15D | 20 | |
| Hawk 65/A/165 | 45 | 22 |
| PC-21 | 38 | 17 |
| PC-9 | 48 | |
| SR22 | 25 | |

| | | |
|--------------------------------------|---------------|----------------|
| ROYAL SAUDI LAND FORCES | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| AH-64A/D/E | 19 | 29 |
| MD530 | 12 | |
| OH-58 | 15 | |
| S-70/UH-60L/M | 43 | 48* |
| Training aircraft/helicopters | | |
| Schweizer 330 | 19 | |

| | | |
|--------------------------|---------------|----------------|
| ROYAL SAUDI NAVY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| AS332/532 | 20 | |
| AS365/565 | 26 | |
| NH90 (NFH) | | 10* |
| S-70/MH-60R | | 10* |

| | | |
|-------------------------------------|---------------|----------------|
| SAUDI ARABIAN NATIONAL GUARD | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| AH-64E | 3 | 9+24* |
| MD530/AH-6i | | 24+12* |
| NH90 (TTH) | | 12* |
| S-70/UH-60M | | 20+4* |

SENEGAL

| | | |
|--------------------------------------|---------------|----------------|
| SENEGAL AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| EMB-314 | | 3 |
| Special mission | | |
| King Air 200 (Recce) | 2 | |
| Transport | | |
| C212 | 1 | |
| F27 | 3 | |
| Combat helicopter | | |
| AS355 | 1 | |
| AW139 | 1 | |
| Bell 206 | 2 | |
| Mi-2 | 2 | |
| Mi-17 | 2 | |
| Mi-35 | 2 | |
| UH-1H | 1 | |
| Training aircraft/helicopters | | |
| TB30 | 2 | |

| | | |
|--------------------------------------|---------------|----------------|
| SERBIA | | |
| SERBIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| J-22 | 17 | |
| MiG-21 | 20 | |
| MiG-29 | 4 | 6* |
| Transport | | |
| An-26 | 2 | |
| PA-34 | 1 | |
| Combat helicopter | | |
| Mi-8/17 | 7 | 4* |
| SA341/342 | 30 | |
| Training aircraft/helicopters | | |
| G-2 | 1 | |
| G-4 | 23 | |
| Lasta 95 | 14 | |

| | | |
|-----------------------------|---------------|----------------|
| SEYCHELLES | | |
| SEYCHELLES AIR FORCE | | |
| Type | Active | Ordered |
| Special mission | | |
| BN-2 (MPA) | 1 | |
| DHC-6 (MPA) | 1 | |
| Domier 228 (SAR) | 1 | |
| Transport | | |
| Y-12 | 1 | |

SIERRA LEONE REPUBLIC OF SIERRA LEONE DEFENCE FORCE

| | | |
|--------------------------|---------------|----------------|
| Type | Active | Ordered |
| Combat helicopter | | |
| Mi-17 | 2 | |
| Mi-24 | 2 | |
| SA319 | 1 | |

SINGAPORE REPUBLIC OF SINGAPORE AIR FORCE

| | | |
|--------------------------------------|---------------|----------------|
| Type | Active | Ordered |
| Combat aircraft | | |
| F-5S | 27 | |
| F-15SG | 32 | 8* |
| F-16C/D | 60 | |
| Special mission | | |
| F50 (MPA) | 5 | |
| Gulfstream G550 (AEW) | 4 | |
| Tanker | | |
| A330 MRTT | | 6 |
| KC-130B/H | 5 | |
| KC-135R | 4 | |
| Transport | | |
| C-130H | 5 | |
| F50 | 4 | |
| Combat helicopter | | |
| AH-64D | 17 | |
| AS332/532 | 32 | |
| CH-47SD | 16 | |
| S-70 | 6 | 2 |
| Training aircraft/helicopters | | |
| F-5T | 9 | |
| H120 | 5 | |
| M-346 | 12 | |
| PC-21 | 19 | |

SLOVAKIA SLOVAK AIR FORCE

| | | |
|--------------------------------------|---------------|----------------|
| Type | Active | Ordered |
| Combat aircraft | | |
| MiG-29 | 12 | |
| Special mission | | |
| L-410 (Recce) | 1 | |
| Transport | | |
| An-26 | 2 | |
| C-27J | | 2+1* |
| L-410 | 6 | |
| Combat helicopter | | |
| Mi-2 | 3 | |
| Mi-17 | 13 | |
| S-70/UH-60M | | 9 |
| Training aircraft/helicopters | | |
| L-39 | 10 | |

SLOVENIA SLOVENIAN ARMED FORCES

| | | |
|--------------------------------------|---------------|----------------|
| Type | Active | Ordered |
| Transport | | |
| L-410 | 1 | |
| PC-6 | 2 | |
| Combat helicopter | | |
| AS532 | 4 | |
| Bell 412 | 8 | |
| Training aircraft/helicopters | | |
| Bell 206 | 4 | |
| PC-9 | 9 | |

SOUTH AFRICA SOUTH AFRICAN AIR FORCE

| | | |
|--------------------------|---------------|----------------|
| Type | Active | Ordered |
| Combat aircraft | | |
| Gripen C | 17 | |
| Special mission | | |
| Cessna 208 (EW) | 1 | |
| DC-3 (EW) | 1 | |
| DC-3 (MPA) | 5 | |
| Transport | | |
| C-130B | 6 | |
| C212 | 3 | |
| Cessna 208 | 8 | |
| DC-3 | 3 | |
| King Air 200/300 | 4 | |
| PC-12 | 1 | |
| Combat helicopter | | |
| AW109 | 28 | |
| BK117 | 6 | |



| | | |
|---------------------------------------|---------------|----------------|
| Oryx | 46 | |
| Rooivalk | 12 | |
| Training aircraft/helicopters | | |
| Gripen D | 9 | |
| Hawk 120 | 23 | |
| PC-7 Mk II | 35 | |
| SOUTH AFRICAN NAVY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Super Lynx 300 | 4 | |
| SOUTH KOREA | | |
| REPUBLIC OF KOREA AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-4E | 71 | |
| F-5E | 158 | |
| F-15K | 59 | |
| F-16C | 118 | |
| F-35A | | 60* |
| FA-50 | 20 | |
| TA-50 | 22 | |
| Special mission | | |
| 737 (AEW) | 4 | |
| Falcon 2000 (EW) | | 2* |
| Hawker 800 (Recce) | 8 | |
| Tanker | | |
| A330 MRTT | | 4* |
| Transport | | |
| C-130H | 12 | |
| C-130J | 4 | |
| CN235 | 18 | 6* |
| Combat helicopter | | |
| AS332 | 3 | |
| Bell 412 | 3 | |
| CH-47D | 5 | |
| Ka-32 | 7 | |
| MD500 | 25 | |
| S-70/HH/UH-60P | 29 | |
| Training aircraft/helicopters | | |
| F-5F | 36 | |
| F-16D | 51 | |
| KC-100 | | 23* |
| KT-1 | 106 | |
| T-50/B | 63 | |
| REPUBLIC OF KOREA ARMY | | |
| Type | Active | Ordered |
| Transport | | |
| King Air 90 | 1 | |
| Combat helicopter | | |
| AH-1J/S | 77 | |
| AH-64E | | 36 |
| BO105 | 12 | |
| CH/HH-47D | 37 | |
| MD500 | 252 | |
| S-70/UH-60L/P | 68 | |
| Surion KUH-1 | 40 | 52+153* |
| UH-1H | 76 | |
| REPUBLIC OF KOREA MARINE CORPS | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Surion KUH-1 | 40* | |
| REPUBLIC OF KOREA NAVY | | |
| Type | Active | Ordered |
| Special mission | | |
| P-3C/K (MPA) | 16 | |
| S-3B (MPA) | | 12* |
| Transport | | |
| F406 Caravan II | 5 | |
| Combat helicopter | | |
| AW159 | | 8 |
| Lynx 99/A | 24 | |
| S-70/MH-60R/UH-60P | 8 | 10* |
| SA319 | 6 | |
| UH-1H | 7 | |
| SOUTH SUDAN | | |
| SOUTH SUDAN PEOPLE'S AIR FORCE | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Mi-17 | 9 | |
| SPAIN | | |

| | | |
|--------------------------------------|---------------|----------------|
| SPANISH AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| E/F/A-18A/AM | 74 | |
| Eurofighter | 34 | 23+13* |
| Special mission | | |
| C212 (EW, Recce) | 5 | |
| CN235 (MPA) | 8 | |
| CN235 (Survey) | 2 | |
| CL-215 (Firefighting) | 14 | |
| CL-415 (Firefighting) | 3 | |
| Falcon 20 (EW) | 2 | |
| P-3A/M (MPA) | 5 | |
| Tanker | | |
| 707 | 1 | |
| KC-130H | 5 | |
| Transport | | |
| 707 | 1 | |
| A400M | | 27 |
| C-130H | 7 | |
| C212 | 14 | |
| C295/CN235 | 21 | |
| Citation V | 3 | |
| Falcon 20 | 2 | |
| King Air 90 | 3 | |
| Combat helicopter | | |
| AS332 | 11 | |
| S-76 | 2 | |
| SA330 | 6 | |
| Training aircraft/helicopters | | |
| C-101 | 66 | |
| EF-18BM | 12 | |
| Eurofighter | 11 | 1* |
| F-5M | 19 | |
| H120 | 15 | |
| S-76 | 6 | |
| T-35 | 35 | |
| SPANISH ARMY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| AS332/532 | 29 | |
| Bell 212 | 6 | |
| BO105 | 14 | |
| CH-47D | 17 | |
| EC135 | 6 | 1 |
| NH90 (TTH) | 1 | 21+7* |
| Tiger | 9 | 9 |
| UH-1H | 14 | |
| Training aircraft/helicopters | | |
| EC135 | 7 | |
| SPANISH NAVAL AVIATION | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| EAV-8B+ | 12 | |
| Special mission | | |
| S-61/SH-3H (AEW) | 2 | |
| Transport | | |
| Citation II/VII | 4 | |
| Combat helicopter | | |
| Bell 212 | 8 | |
| MD500 | 6 | |
| S-61/ASH/SH-3H | 7 | |
| S-70/SH-60B | 10 | |
| Training aircraft/helicopters | | |
| TAV-8B | 1 | |
| SRI LANKA | | |
| SRI LANKAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-7 | 7 | |
| Kfir | 9 | |
| MiG-23 | 1 | |
| MiG-27 | 6 | |
| Special mission | | |
| King Air 200/1300 (MPA) | 2 | |
| Transport | | |
| An-32 | 4 | |
| C-130K | 2 | |
| MA60 | | 2 |
| Y-12 | 9 | |

| | | |
|---|---------------|----------------|
| Combat helicopter | | |
| Bell 206 | 4 | |
| Bell 212/412 | 13 | |
| Mi-17/171 | 15 | |
| Mi-24/35 | 9 | |
| Training aircraft/helicopters | | |
| FI-7 | 1 | |
| K-8 | 5 | 2* |
| SRI LANKAN NAVY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Mi-171 | 4 | |
| SUDAN | | |
| SUDAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| A-5 | 20 | |
| F-6 | 8 | |
| F-7 | 20 | |
| MiG-21 | 4 | |
| MiG-23 | 3 | |
| MiG-29 | 11 | |
| Su-24 | 3 | |
| Su-25 | 15 | |
| Transport | | |
| An-12 | 7 | |
| An-26 | 8 | |
| An-30/32 | 6 | |
| C-130H | 1 | |
| DHC-5 | 1 | |
| Il-76 | 1 | |
| Combat helicopter | | |
| Bell 205 | 2 | |
| Bell 212 | 3 | |
| Mi-2 | 1 | |
| Mi-8/17 | 22 | |
| Mi-24/35 | 36 | |
| Training aircraft/helicopters | | |
| K-8 | 6 | |
| SURINAME | | |
| SURINAME AIR FORCE | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Dhruv ALH | | 3 |
| SA316 | 3 | |
| SWAZILAND | | |
| UMBUTFO SWAZILAND DEFENCE FORCE | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| SA316 | 3 | |
| SWEDEN | | |
| SWEDISH AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Gripen C | 74 | |
| Gripen E | | 60+10* |
| Special mission | | |
| Gulfstream IV (SIGINT) | 2 | |
| Saab 340 (AEW) | 2 | |
| Tanker | | |
| KC-130H | 1 | |
| Transport | | |
| C-130H | 5 | |
| Saab 340 | 2 | |
| Training aircraft/helicopters | | |
| Gripen D | 24 | |
| PC-21 | | 20* |
| Saab 105 | 72 | |
| SWEDISH ARMED FORCES HELICOPTER WING | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| AW109 | 20 | |
| NH90 (NFH/TTH) | 11 | 7 |
| S-70/UH-60M | 15 | |
| SWITZERLAND | | |
| SWISS AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F/A-18C | 26 | |
| F-5E | 37 | |

South Korea has selected the A330 MRTT for a four-aircraft deal. The tanker will support types including the F-15K



Airbus Defence & Space

| | | |
|--------------------------------------|---------------|----------------|
| Special mission | | |
| PC-9 (Target towing) | 8 | |
| Transport | | |
| Beech 1900 | 1 | |
| DHC-6 | 1 | |
| King Air 300 | 1 | |
| PC-6 | 15 | |
| Combat helicopter | | |
| AS532 | 25 | |
| EC635 | 18 | |
| Training aircraft/helicopters | | |
| F/A-18D | 5 | |
| F-5F | 12 | |
| PC-7 | 28 | |
| PC-21 | 8 | |
| SYRIA | | |
| SYRIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| MiG-21 | 53 | |
| MiG-23 | 90 | |
| MiG-25 | 2 | |
| MiG-29 | 20 | 12 |
| Su-22 | 42 | |
| Su-24 | 18 | |
| Transport | | |
| An-26 | 2 | |
| Combat helicopter | | |
| Ka-28 | 2 | |
| Mi-2 | 13 | |
| Mi-8/17 | 52 | |
| Mi-14 | 11 | |
| Mi-25 | 28 | |
| SA342 | 62 | |
| Training aircraft/helicopters | | |
| L-39 | 66 | |

| | | |
|--------------------------------------|---------------|----------------|
| Yak-130 | 36 | |
| TAIWAN | | |
| REPUBLIC OF CHINA AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F/RF-5E | 23 | |
| F-16A | 115 | |
| F-CK-1A/C | 102 | |
| Mirage 2000-5EI | 47 | |
| Special mission | | |
| Beech 1900 (Calibration) | 2 | |
| C-130H (EW) | 1 | |
| E-2K (AEW) | 6 | |
| P-3C (MPA) | 8 | |
| S-2 (MPA) | 11 | |
| Transport | | |
| C-27J | 6* | |
| C-130H | 19 | |
| Combat helicopter | | |
| EC225 | 3 | 17* |
| S-70/UH-60A | 13 | |
| Training aircraft/helicopters | | |
| AT-3 | 49 | |
| F-5F | 25 | |
| F-16B | 28 | |
| F-CK-1B/D | 25 | |
| Mirage 2000-5DI | 9 | |
| T-34 | 37 | |
| REPUBLIC OF CHINA ARMY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| AH-1W | 62 | |
| AH-64E | 29 | |
| CH-47D | 8 | |
| OH-58 | 38 | |
| S-70/UH-60M | 8 | 37* |

| | | |
|---|---------------|----------------|
| UH-1H | 91 | |
| Training aircraft/helicopters | | |
| Bell 206 | 29 | |
| REPUBLIC OF CHINA NAVY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| MD500 | 8 | |
| S-70/MH-60R | 18 | 10* |
| TAJIKISTAN | | |
| TAJIKISTAN AIR FORCE | | |
| Type | Active | Ordered |
| Transport | | |
| An-26 | 1 | |
| Combat helicopter | | |
| Mi-8 | 14 | |
| Mi-24 | 6 | |
| Training aircraft/helicopters | | |
| L-39 | 4 | |
| TANZANIA | | |
| TANZANIAN PEOPLE'S DEFENCE FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-6 | 3 | |
| F-7 | 11 | |
| Special mission | | |
| SB7L-360 (Recce) | 1 | |
| Transport | | |
| An-28 | 1 | |
| DHC-5 | 4 | |
| Y-8 | 2 | |
| Y-12 | 2 | |
| Combat helicopter | | |
| Bell 412 | 2 | |
| Training aircraft/helicopters | | |
| FT-6 | 1 | |
| FT-7 | 2 | |



| | | |
|--------------------------------------|---------------|----------------|
| K-8 | 6 | |
| THAILAND | | |
| ROYAL THAI AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Alpha Jet | 19 | |
| F-5E | 30 | |
| F-16A | 38 | |
| Gripen C | 8 | |
| Special mission | | |
| DA42 (Recce) | 5 | |
| P180 (Recce) | | 1 |
| Saab 340 (AEW) | 2 | |
| Transport | | |
| Arava | 2 | |
| BT-67 | 6 | |
| C-130H | 12 | |
| HS 748 | 5 | |
| King Air 90 | 1 | |
| Learjet 35 | 1 | |
| Nomad 22 | 14 | |
| Saab 340 | 2 | |
| Combat helicopter | | |
| Bell 412 | 8 | |
| H225M | 4 | 2 |
| UH-1H | 17 | |
| Training aircraft/helicopters | | |
| DA42 | 6 | |
| F-5B/F | 4 | |
| F-16B | 15 | |
| Gripen D | 4 | |
| L-39 | 35 | |
| PC-9 | 23 | |
| T-50 | | 4 |
| ROYAL THAI ARMY | | |
| Type | Active | Ordered |
| Transport | | |
| C212 | 2 | |
| King Air 200 | 2 | |
| Combat helicopter | | |
| AH-1F | 7 | |
| AW139 | 2 | 8 |
| Bell 206 | 20 | |
| Bell 212 | 51 | |
| CH-47D | 6 | |
| H125M | 8 | |
| H145M | | 6+8* |
| Mi-17 | 3 | 2+1* |
| S-70/UH-60L/M | 10 | 2 |
| UH-1H | 79 | |
| Training aircraft/helicopters | | |
| Enstrom 480 | 16 | |
| R44 | 1 | |
| Schweizer 269 | 44 | |
| ROYAL THAI NAVY | | |
| Type | Active | Ordered |
| Special mission | | |
| CL-215 (Firefighting) | 1 | |
| Dornier 228 (MPA) | 7 | |
| F27 (MPA) | 2 | |
| P-3T (MPA) | 1 | |
| Transport | | |
| F27 | 2 | |
| Nomad 24 | 3 | |
| Combat helicopter | | |
| Bell 212 | 7 | |
| Bell 214 | 2 | |
| H145M | | 5 |
| S-70/MH-60S | 8 | |
| S-76 | 4 | |
| Super Lynx 110 | 2 | |
| TOGO | | |
| TOGOLESE AIR FORCE | | |
| Type | Active | Ordered |
| Transport | | |
| King Air 200 | 2 | |
| Training aircraft/helicopters | | |
| Alpha Jet | 5 | |
| EMB-326 | 4 | |
| TB30 | 3 | |

| | | |
|--|---------------|----------------|
| TRINIDAD & TOBAGO | | |
| TRINIDAD & TOBAGO AIR GUARD | | |
| Type | Active | Ordered |
| Special mission | | |
| Metro 23 (MPA) | 2 | |
| Combat helicopter | | |
| AW139 | 4 | |
| TUNISIA | | |
| TUNISIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-5E | 12 | |
| Transport | | |
| C-130B/H | 7 | |
| C-130J | 2 | |
| L-410 | 4 | |
| Combat helicopter | | |
| AS350 | 6 | |
| Bell 205 | 20 | |
| Bell 412 | 3 | |
| S-61/CH/HH-3E/F | 19 | |
| S-70/UH-60M | | 8+4* |
| SA313 | 8 | |
| SA316 | 8 | |
| UH-1H/N | 12 | |
| Training aircraft/helicopters | | |
| F-5F | 3 | |
| L-59 | 9 | |
| MB-326 | 10 | |
| SF-260 | 18 | |
| TURKEY | | |
| TURKISH AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-4E | 49 | |
| F-16C | 158 | |
| F-35A | | 116* |
| Special mission | | |
| 737 (AEW) | 3 | |
| CN235 (EW, Recce) | 2 | |
| Tanker | | |
| KC-135R | 7 | |
| Transport | | |
| A400M | 2 | 8 |
| C-130B/E | 15 | |
| C160 | 16 | |
| CN235 | 43 | |
| Combat helicopter | | |
| AS532 | 20 | |
| T-70 | 6 | |

| | | |
|---------------------------------------|---------------|----------------|
| UH-1H | 59 | |
| Training aircraft/helicopters | | |
| F-16C/D | 87 | |
| Hurkus B | | 15* |
| KT-1T | 40 | 15* |
| NF-5A/B | 23 | |
| SF-260 | 36 | |
| T-38 | 68 | |
| TURKISH ARMY | | |
| Type | Active | Ordered |
| Transport | | |
| King Air 200 | 6 | |
| Combat helicopter | | |
| AH-1P/S/W | 55 | |
| AS532 | 27 | |
| Bell 205 | 69 | |
| CH-47F | | 11+3* |
| OH-58 | 3 | |
| S/T-70 | 58 | 31 |
| T129 | 9 | 50+40* |
| UH-1H | 86 | |
| Training aircraft/helicopters | | |
| Bell 206 | 22 | |
| TURKISH NAVY | | |
| Type | Active | Ordered |
| Special mission | | |
| ATR 72 (MPA) | | 2 |
| CN235 (MPA) | 6 | |
| Transport | | |
| ATR 72 | 1 | 1 |
| Combat helicopter | | |
| Bell 212 | 13 | |
| S-70 | 24 | |
| TURKMENISTAN | | |
| TURKMENISTAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| MiG-29 | 24 | |
| Su-25 | 20 | |
| Transport | | |
| An-26 | 1 | |
| An-74 | 2 | |
| Combat helicopter | | |
| Mi-8 | 15 | |
| Mi-24 | 1 | |
| UGANDA | | |
| UGANDA PEOPLE'S DEFENCE FORCES | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| MiG-21 | 5 | |



Archangel strike aircraft
are now in service with the
United Arab Emirates

| | | |
|---|---------------|----------------|
| Su-30 | 8 | 4 |
| Transport | | |
| Cessna 208 | 2 | |
| Combat helicopter | | |
| Bell 206 | 7 | |
| Mi-17 | 10 | |
| Mi-24 | 5 | |
| Training aircraft/helicopters | | |
| L-39 | 6 | |
| SF-260 | 4 | |
| UKRAINE | | |
| UKRAINIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| MiG-29 | 21 | |
| Su-24 | 12 | |
| Su-25 | 15 | |
| Su-27 | 18 | |
| Special mission | | |
| An-26 (Calibration) | 1 | |
| An-30 (Recce) | 3 | |
| Transport | | |
| An-24/26 | 21 | |
| An-70 | 1 | 3+2* |
| Il-76 | 5 | |
| Tu-134 | 1 | |
| Combat helicopter | | |
| Mi-8 | 12 | |
| Training aircraft/helicopters | | |
| L-39 | 40 | |
| UKRAINE ARMY AVIATION | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| Mi-8 | 35 | |
| Mi-24 | 33 | |
| UKRAINIAN NAVY | | |
| Type | Active | Ordered |
| Special mission | | |
| Be-12 (SAR) | 2 | |
| Transport | | |
| An-26 | 2 | |
| Combat helicopter | | |
| Ka-27 | 5 | |
| Ka-29 | 4 | |
| Mi-14 | 3 | |
| UNITED ARAB EMIRATES | | |
| UNITED ARAB EMIRATES AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-16E | 55 | 30* |
| Mirage 2000-9/EAD/RAD | 41 | |
| Special mission | | |
| Dash 8 (MPA) | 2 | |
| Global 6000 (AEW, Recce) | | 2 |
| King Air 90 (Weather Recce) | 3 | |
| Saab 340 (AEW) | 2 | |
| Tanker | | |
| A330 MRTT | 3 | |
| Transport | | |
| C-17 | 7 | 1 |
| C-130H/L-100 | 8 | |
| Cessna 208 | 2 | |
| CN235 | 7 | |
| King Air 350 | 2 | |
| P-750 | 1 | |
| P180 | 2 | |
| Saab 340 | 1 | |
| Combat helicopter | | |
| AW139 | 13 | 1 |
| Bell 412 | 4 | |
| Training aircraft/helicopters | | |
| Bell 407 (Horizon International Flight Academy) | 12 | |
| F-16F | 20 | |
| G115 | 12 | |
| GA8 Airvan | 1 | |
| Hawk 61/63/102 | 31 | |
| King Air 90 | 3 | |
| M-346 | | 48* |
| MB-339 | 10 | |
| Mirage 2000-9DAD | 14 | |

| | | |
|---|---------------|----------------|
| PC-7 | 31 | |
| PC-21 | 25 | |
| UNITED ARAB EMIRATES JOINT AIR COMMAND | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| AT-802 | 18 | |
| Special mission | | |
| AW609 (SAR) | | 6* |
| Cessna 208 (Recce) | 1 | |
| DHC-6 (Recce) | 2 | |
| S2R Archangel (Recce) | 2 | 22 |
| Transport | | |
| Cessna 208 | 7 | |
| DHC-6 | 8 | |
| Combat helicopter | | |
| AH-64D/E | 30 | 30* |
| AS350 | 1 | |
| AS565 | 13 | |
| Bell 407 | 21 | 24 |
| CH-47C+/F | 19 | 5 |
| H125 | 13 | |
| S-70/UH-60L/M | 59 | |
| Training aircraft/helicopters | | |
| AS350 | 1 | |
| UNITED ARAB EMIRATES NAVY | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| AS332 | 8 | |
| UNITED KINGDOM | | |
| ROYAL AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Eurofighter Typhoon FGR4 | 88 | 41 |
| F-35B | 3 | 11+124* |
| Tornado GR4 | 77 | |
| Special mission | | |
| 707 (E-3D) (AEW) | 6 | |
| 737 (P-8) (MPA) | | 9* |
| BN-2 (Recce) | 3 | |
| Global Express (Sentinel R1) (Recce) | 5 | |
| King Air 350 (Shadow R1) (Recce) | 5 | 2* |
| RC-135W (ELINT) | 2 | 1 |
| Tanker | | |
| A330 MRTT (AirTanker) | 9 | |
| Transport | | |
| A400M | 5 | 17 |
| BAe 146 | 2 | |
| C-17 | 8 | |
| C-130J | 23 | |
| Combat helicopter | | |
| AW109 | 1 | |
| CH-47 Chinook HC3/4/6 | 45 | 2 |
| SA330 Puma HC2 | 21 | |
| Sea King HAR3/3A (SAR) | 10 | |
| Training aircraft/helicopters | | |
| Eurofighter Typhoon T3 | 22 | |
| G115 (Babcock) | 119 | |
| G120TP (Affinity) | | 23* |
| Hawk T1 | 50 | |
| Hawk T2 | 28 | |
| King Air 200/350 | 8 | |
| Phenom 100 (Affinity) | | 5* |
| T-6C (Affinity) | | 10* |
| Tornado GR4 | 10 | |
| Tucano T1 | 42 | |
| ARMY AIR CORPS | | |
| Type | Active | Ordered |
| Special mission | | |
| BN-2 (Recce) | 11 | 1* |
| Combat helicopter | | |
| AH-64D Apache AH1 | 49 | |
| AS365 | 6 | |
| Lynx AH9A | 12 | |
| SA341 | 20 | |
| Wildcat AH1 | 18 | 9 |
| Training aircraft/helicopters | | |
| BN-2 | 1 | |
| ROYAL NAVY FLEET AIR ARM | | |
| Type | Active | Ordered |
| Special mission | | |

| | | |
|---|---------------|----------------|
| Sea King ASaC 7 (AEW) | 8 | |
| Combat helicopter | | |
| AW101 Merlin HM2 | 25 | |
| AW101 Merlin HC3/A/i | 18 | |
| Lynx HMA8 | 16 | |
| Sea King HC4/4+ | 6 | |
| Sea King HU5 (SAR) | 9 | |
| Wildcat AH1/HMA1 | 22 | 11 |
| Training aircraft/helicopters | | |
| King Air 350 (Ascent) | 4 | |
| DEFENCE HELICOPTER FLYING SCHOOL | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| AW109 (FB Heliservices) | 2 | |
| AW139 (FB Heliservices) | 3 | |
| Bell 212/412 (FB Heliservices) | 11 | |
| Training aircraft/helicopters | | |
| AS350 (FB Heliservices) | 34 | |
| Bell 212/412 (FB Heliservices) | 12 | |
| UNITED STATES OF AMERICA | | |
| UNITED STATES AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| A-10C | 291 | |
| AC-130J | 1 | |
| AC-130U/W | 28 | |
| B-1 | 60 | |
| B-2 | 20 | |
| B-52 | 77 | |
| F-15C/E | 417 | |
| F-16C | 803 | |
| F-22 | 178 | |
| F-35A | 45 | 57+1,634* |
| LRS-B | | 100* |
| Special mission | | |
| 707 (Recce) | 1 | |
| 707 (E-3B/C/G) (AEW) | 30 | |
| 707 (E-8C) (Recce) | 16 | |
| 737 (NT-43A) (Radar testbed) | 1 | |
| 747 (E-4B) (Comms) | 4 | |
| 757 (C-32B) (Recce) | 2 | |
| Beechjet T1A (Recce) | 21 | |
| Dash 8 (E-9A) (Recce) | 5 | |
| DHC-6 (Recce) | 1 | |
| EC-130H (EW) | 14 | |
| EC-130J (EW) | 7 | |
| Falcon 20 (HU-25) (Recce) | 2 | |
| Global Express (E-11A) (Comms) | 4 | |
| HC-130J (SAR) | 14 | 11+8* |
| HC-130N/P (SAR) | 17 | |
| KC-135R (Recce) | 1 | |
| King Air 350/MC-12W (Recce) | 53 | |
| Learjet 35 (NC-21A) (Calibration) | 1 | |
| Metro 23 (RC-26B) (Recce) | 11 | |
| OC-135 (Recce) | 2 | |
| PC-12 (U-28) (Recce) | 16 | |
| RC-135 (ELINT) | 21 | |
| U-2S (Recce) | 26 | |
| WC-130J (Weather recce) | 10 | |
| WC-135C/W (Weather recce) | 2 | |
| Tanker | | |
| 767 (KC-46A) | | 4+175* |
| DC-10 (KC-10) | 59 | |
| KC-135R/T | 397 | |
| MC-130H/P | 24 | |
| MC-130J | 30 | 14+19* |
| Transport | | |
| 328 Jet (C-146A) | 18 | |
| An-28 (C-145A) | 7 | |
| Beech 1900 (C-12J) | 3 | |
| C-5A/B/M | 55 | |
| C-17 | 222 | |
| C/LC-130H | 272 | |
| C-130J | 104 | 17+27* |
| C212 | 1 | |
| Cessna 208 (UC-27B) | 2 | |
| CN235 | 2 | |
| DHC-6 (UV-18) | 4 | |
| Gulfstream III/IV (C-20) | 7 | |
| King Air 200 (C-12) | 25 | |



The US Navy has more than 480 Super Hornets, but a shrinking backlog

US Navy

| | | |
|---|---------------|----------------|
| Learjet 35 (C-21A) | 31 | |
| Metro III (C-26A) | 1 | |
| PC-12 (U-28) | 20 | |
| Combat helicopter | | |
| CV-22 | 42 | 3+5* |
| S-70/HH-60G/U/W/MH-60G | 100 | 112* |
| UH-1N | 62 | |
| Training aircraft/helicopters | | |
| 707 (E-8C) | 1 | |
| Beechjet T-1A | 157 | |
| DA20 | 50 | |
| DA40 (T-52A) | 2 | |
| F-15D | 33 | |
| F-16D | 154 | |
| F-35A | 26 | |
| SR20 (T-53A) | 25 | |
| T-6A | 449 | |
| T-38A/C | 480 | |
| TC-130H | 1 | |
| TC-135S/W | 3 | |
| TH-1H (UH-1) | 37 | |
| TU-2S | 5 | |
| UNITED STATES ARMY | | |
| Type | Active | Ordered |
| Special mission | | |
| Dash 8 (Recce) | 6 | |
| DHC-7 (EO-5) (EW) | 3 | |
| DHC-7 (RC-7) (Recce) | 7 | |
| King Air 200/300/350 (C/RC-12/MC-12W) (Recce) | 83 | 6* |
| Transport | | |
| Beech 1900 (C-1) | 3 | |
| C-27J | 6 | |
| C212 | 3 | |
| Citation Encore/Ultra (UC-35) | 28 | |
| DHC-6 (UV-18) | 5 | |
| F27 (C-31) | 2 | |
| King Air 200/350 (C-12) | 104 | 1+4* |
| Metro 23 (C-26) | 12 | |
| PC-6 | 1 | |
| Combat helicopter | | |
| AH-64D/E | 792 | 25 |
| CH-47D/F/MH-47G | 527 | 21+50* |
| EC145 (UH-72A) | 341 | 13 |
| MD500 (AH/MH-6) | 47 | |
| Mi-8/17 | 5 | |
| OH-58A/C/D/F | 488 | |
| S-70/EH/HH/MH/UH-60 | 2,146 | 39+29* |
| UH-1H/V | 53 | |
| Training aircraft/helicopters | | |
| Bell 206 (TH-67A) | 163 | |
| EC145 (UH-72A) | | 41+31* |

| | | |
|--|---------------|----------------|
| King Air 100/200 | 12 | |
| Mi-24 | 1 | |
| T-6D | 4 | |
| UNITED STATES MARINE CORPS | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| AV-8B/+ | 111 | |
| F/A-18B/C/D | 190 | |
| F-35B/C | 26 | 20+362* |
| Special mission | | |
| EA-6B (EW) | 26 | |
| Tanker | | |
| KC-130J | 48 | 6+5* |
| KC-130T | 23 | |
| Transport | | |
| Citation Encore/Sovereign/Ultra (U-35) | 12 | 2 |
| DC-9 (C-9) | 2 | |
| Gulfstream IV (C-20) | 1 | |
| King Air 200/350 (UC-12) | 12 | 1 |
| Combat helicopter | | |
| AH-1W | 128 | |
| AH-1Z | 36 | 51+113* |
| CH-53E | 146 | |
| CH-53K | | 201* |
| MV-22B | 222 | 71+36* |
| UH-1N | 5 | |
| UH-1Y | 107 | 52+12* |
| Training aircraft/helicopters | | |
| F/A-18B/C/D | 37 | |
| F-5F/N | 13 | |
| F-35B/C | 12 | |
| TAV-8B | 16 | |
| T-34 | 3 | |
| UNITED STATES NAVY | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F/A-18A/C | 184 | |
| F/A-18E/F | 342 | 23 |
| F-35C | 12 | 12+234* |
| Special mission | | |
| 707 (E-6B) (Comms) | 16 | |
| 737 (P-8A) (MPA) | 37 | 25+39* |
| DHC-6 (UV-18) (Recce) | 1 | |
| E-2C/D (AEW) | 68 | 33+24* |
| EA-18G (EW) | 105 | 24+3* |
| EP-3E (ELINT) | 14 | |
| Gulfstream G550 (Range support) | | 1* |
| Learjet 35/36 (EW) | 2 | |
| Metro 23 (C-26) (Recce) | 1 | |
| P-3C (MPA) | 100 | |
| S-3B (Recce) | 2 | |

| | | |
|--------------------------------------|---------------|----------------|
| Tanker | | |
| KC-130R/T | 5 | |
| Transport | | |
| 737 (C-40) | 14 | 1 |
| C-2 | 35 | |
| C-130T | 20 | |
| Gulfstream IV (C-20) | 4 | |
| King Air 200 (UC-12) | 14 | |
| Metro 23 (C-26) | 6 | |
| PC-12 | 1 | |
| Combat helicopter | | |
| HV-22 | 1 | 7+41* |
| MH-53E | 27 | |
| S-70/EH/HH/MH/SH/UH-60 | 487 | 37+70* |
| Training aircraft/helicopters | | |
| Bell 206 (TH-57) | 113 | |
| EC145 (TH-72A) | 5 | |
| F/A-18A/B/C/D | 130 | |
| F/A-18E/F | 139 | |
| F-5F/N | 30 | |
| F-16A/B | 14 | |
| F-35C | 2 | |
| Gulfstream G100 (C-38) | 2 | |
| King Air 90/200 (C-12/T-44) | 82 | |
| OH-58 | 3 | |
| T-6A/B/C | 266 | 57 |
| T-34 | 93 | |
| T-38 | 10 | |
| T-45A/C | 197 | |
| TE-2C | 1 | |
| US DEPARTMENT OF DEFENSE | | |
| Type | Active | Ordered |
| Combat helicopter | | |
| S-70/UH-60 | | 260* |
| URUGUAY | | |
| URUGUAYAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| A-37 | 8 | |
| IA-58 | 5 | |
| Special mission | | |
| C212 (MPA) | 4 | |
| Transport | | |
| C-130B | 2 | |
| C212 | 1 | |
| EMB-110 | 2 | |
| EMB-120 | 1 | |
| Y-12 | | 2* |
| Combat helicopter | | |
| AS565 | 2 | |
| Bell 212 | 3 | |

| | | |
|---------------------------------|--------|---------|
| UH-1H | 3 | |
| Training aircraft/helicopters | | |
| PC-7 | 5 | |
| SF-260 | 5 | |
| URUGUAYAN NAVAL AVIATION | | |
| Type | Active | Ordered |
| Special mission | | |
| King Air 200 (MPA) | 1 | |
| Transport | | |
| King Air 200 | 1 | |
| Combat helicopter | | |
| AS355 | 1 | |
| BO105 | 2 | |
| Training aircraft/helicopters | | |
| T-34 | 1 | |
| T-35 | | 4* |
| UZBEKISTAN | | |
| UZBEKISTAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| MiG-29 | 39 | |
| Su-25 | 20 | |
| Su-27 | 30 | |
| Transport | | |
| An-12 | 2 | |
| An-26 | 4 | |
| C295 | | 4 |
| Il-76 | 4 | |
| Combat helicopter | | |
| AS532 | 2 | 6 |
| H125 | 2 | 4 |
| Mi-8 | 40 | |
| Mi-24/35 | 25 | |
| Training aircraft/helicopters | | |
| L-39 | 2 | |
| VENEZUELA | | |
| VENEZUELAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-16A | 10 | |
| Su-30 | 23 | |
| Special mission | | |
| Falcon 20 (EW) | 1 | |
| Metro III (EW) | 1 | |
| Tanker | | |
| 707 | 1 | |
| Transport | | |
| C-130H | 5 | |
| Cessna 208 | 4 | |
| Citation II | 1 | |
| Dornier 228/NG | 3 | 7 |
| Gulfstream G150 | | 4* |
| King Air 200/350 | 5 | 10* |
| Metro III | 1 | |
| Shorts 360 | 2 | |
| Y-8 | 8 | |
| Combat helicopter | | |
| AS332/532 | 10 | |
| Mi-17 | 6 | |
| Mi-28 | | 10* |
| Training aircraft/helicopters | | |
| DA40 | 24 | |
| DA42 | 6 | |
| EMB-312 | 19 | |
| Enstrom 280/480 | 6 | 12 |
| F-16B | 3 | |
| K-8 | 15 | 9* |
| L-15 | | 24* |
| SF-260 | 12 | |
| VENEZUELAN ARMY AVIATION | | |
| Type | Active | Ordered |
| Transport | | |
| An-28 | 16 | |
| Arava | 11 | |
| King Air 200 | 4 | |
| Combat helicopter | | |
| Bell 206 | 3 | |
| Bell 412 | 11 | |
| Mi-17 | 21 | |

| | | |
|--------------------------------------|--------|---------|
| Mi-26 | 3 | |
| Mi-35 | 10 | |
| S-61/ASH-3D | 3 | |
| Training aircraft/helicopters | | |
| Bell 206 | 1 | |
| VENEZUELAN NAVAL AVIATION | | |
| Type | Active | Ordered |
| Special mission | | |
| C212 (MPA) | 3 | |
| Transport | | |
| C212 | 3 | |
| Cessna 208 | 1 | |
| King Air 90/200 | 2 | |
| Turbo Commander | 1 | |
| Combat helicopter | | |
| Bell 212/412 | 10 | |
| Mi-17 | 6 | |
| Z-9 | | 8* |
| Training aircraft/helicopters | | |
| Bell 206 | 2 | |
| VIETNAM | | |
| VIETNAMESE PEOPLE'S AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| Su-22 | 36 | |
| Su-27/30 | 37 | 10 |
| Special mission | | |
| An-28 (MPA) | 1 | |
| Transport | | |
| An-26 | 30 | |
| C295 | 3 | |
| Combat helicopter | | |
| Ka-32 | 2 | |
| Mi-8/17 | 87 | |
| Mi-24 | 25 | |
| UH-1H | 26 | |
| Training aircraft/helicopters | | |
| L-39 | 26 | |
| VIETNAMESE NAVY | | |
| Type | Active | Ordered |
| Special mission | | |
| DHC-6 Guardian 400 (MPA/SAR) | 3 | |
| Transport | | |
| DHC-6 Guardian 400 | 3 | |
| Combat helicopter | | |
| EC225 | 2 | |
| Ka-28 | 8 | |
| YEMEN | | |
| YEMEN ARAB REPUBLIC AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-5E | 11 | |

| | | |
|-------------------------------|--------|---------|
| MiG-21 | 19 | |
| MiG-29 | 24 | 32* |
| Su-22 | 23 | |
| Special mission | | |
| Cessna 208 (Recce) | 2 | |
| Transport | | |
| An-24/26 | 8 | |
| Combat helicopter | | |
| Bell 206 | 1 | |
| Bell 212/412 | 4 | |
| Ka-32 | 3 | |
| Mi-8/17/171 | 34 | |
| Mi-14 | 2 | |
| Mi-25/35 | 14 | |
| UH-1H | 4 | |
| Training aircraft/helicopters | | |
| F-5B | 2 | |
| L-39 | 19 | |
| ZAMBIA | | |
| ZAMBIAN AIR FORCE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-6 | 8 | |
| MiG-21 | 10 | |
| Transport | | |
| MA60 | 1 | |
| Y-12 | 8 | |
| Combat helicopter | | |
| Bell 205 | 13 | |
| Z-9 | 3 | 4 |
| Training aircraft/helicopters | | |
| FT-6 | 2 | |
| K-8 | 16 | |
| L-15 | | 6 |
| SF-260 | 9 | 3 |
| ZIMBABWE | | |
| AIR FORCE OF ZIMBABWE | | |
| Type | Active | Ordered |
| Combat aircraft | | |
| F-7 | 7 | |
| MiG-23 | 3 | |
| Transport | | |
| BN-2 | 5 | |
| C212 | 11 | |
| Combat helicopter | | |
| Mi-24/35 | 6 | |
| Mi-172 | 1 | |
| SA316 | 13 | |
| Training aircraft/helicopters | | |
| Bell 412 | 9 | |
| K-8 | 10 | |
| SF-260 | 28 | |

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Argentina's Mirage farewell

Given our past coverage of the retirement of the Royal Navy's Sea Harriers, we thought it only right to pay tribute to the Shar's Falklands War adversary, the Dassault Mirage (*right*), which formally departed Argentinian air force service on 28 November, after 42 years.

Budget constraints have forced Buenos Aires to put out to grass the ageing French fighters – operated by the VI Air Brigade at its Tandil base.

Mirage IIIEAs flew 58 sorties during the South Atlantic campaign in 1982, including several successful strikes on British ships.

Patently silly

Airline operations these days are all about reducing gate turnarounds. Every minute an airliner is on the ground is lost revenue, and getting the self-loading cargo on board and seated is usually the most time-consuming bit. So how is this for a bit of thinking inside the box from Airbus?

Boffins have come up with a concept for a detachable cabin. The idea is that passengers would be strapped in at the gate before the aircraft arrives. The cabin, or "module", would then be lowered, with its human cargo in place, into the aircraft – making the passengers feel even more like sardines in a can, presumably.

Airbus's application has just been registered by the US patent office, but we suspect it's some way off certification.



"Okay, at least we've won two World Cups."

Roxas off

AirAsia owner Tony Fernandes may be regretting an off-the-cuff remark at a business leaders' conference in Manila.

Ahead of the event police had, for security reasons, shut a busy coastal highway to all but delegates, prompting Fernandes to remark – in the manner of Swiss Tony, the bouffant-haired secondhand car dealer from *The Fast Show* – that being in the only car on the normally log-jammed Roxas Boulevard was "like having sex".

A disgruntled commuter – one of thousands forced by the closure to use alternative routes that were even more congested than normal – tweeted



Fernandes: sex drive

scathingly: "By that, did @tonyfernandes mean it was quick or was he alone?"

Thrill in a Mil

Ever fancied seeing the world's most austere capital from an ancient Soviet-era helicopter? This holiday could be for you.

North Korea is offering foreign tourists sightseeing tours of Pyongyang in a Mil Mi-17. For \$195 you can catch an aerial view of the 105-storey Ryungyong Hotel and the 150,000-capacity May Day stadium; the world's largest.

Photography is apparently allowed, but expect some close company.

Eyes on Alsace

A great increase in aerial activity on the part of German aviators is reported in Alsace. They have made repeated efforts to reconnoitre French positions. It would seem Germany contemplated an important offensive there.

A blow for Italy

Signor Mussolini must be very glad the ships of the Italian

Navy were built for speed. But the Swordfish and Skuas from

H.M.S. Ark Royal are faster. In the action off Sardinia the second battleship of the Littorio class was hit by a torpedo, and as her sister was a victim of Taranto, the two most powerful vessels of the fleet are out of action.

Exports on the rise

British aviation exports for October 1965 totalled

£11,386,000, compared with £7,741,796 for October last year.

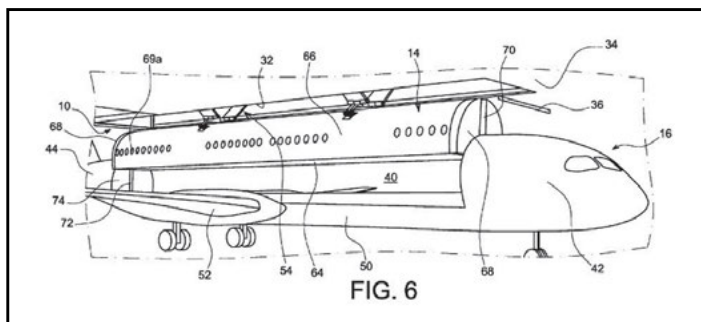
Board of Trade figures showed a January to October total of £107,061,000, compared with £77,259,222 for the first ten months of 1964.

Gulf engine trouble

Royal Air Force Puma HC.1 transport helicopters in the

Gulf are suffering major engine problems because of sand.

The RAF is believed to be looking to acquire spare Puma engines and has approached manufacturer Aérospatiale to keep the Gulf force of at least 15 helicopters flying.



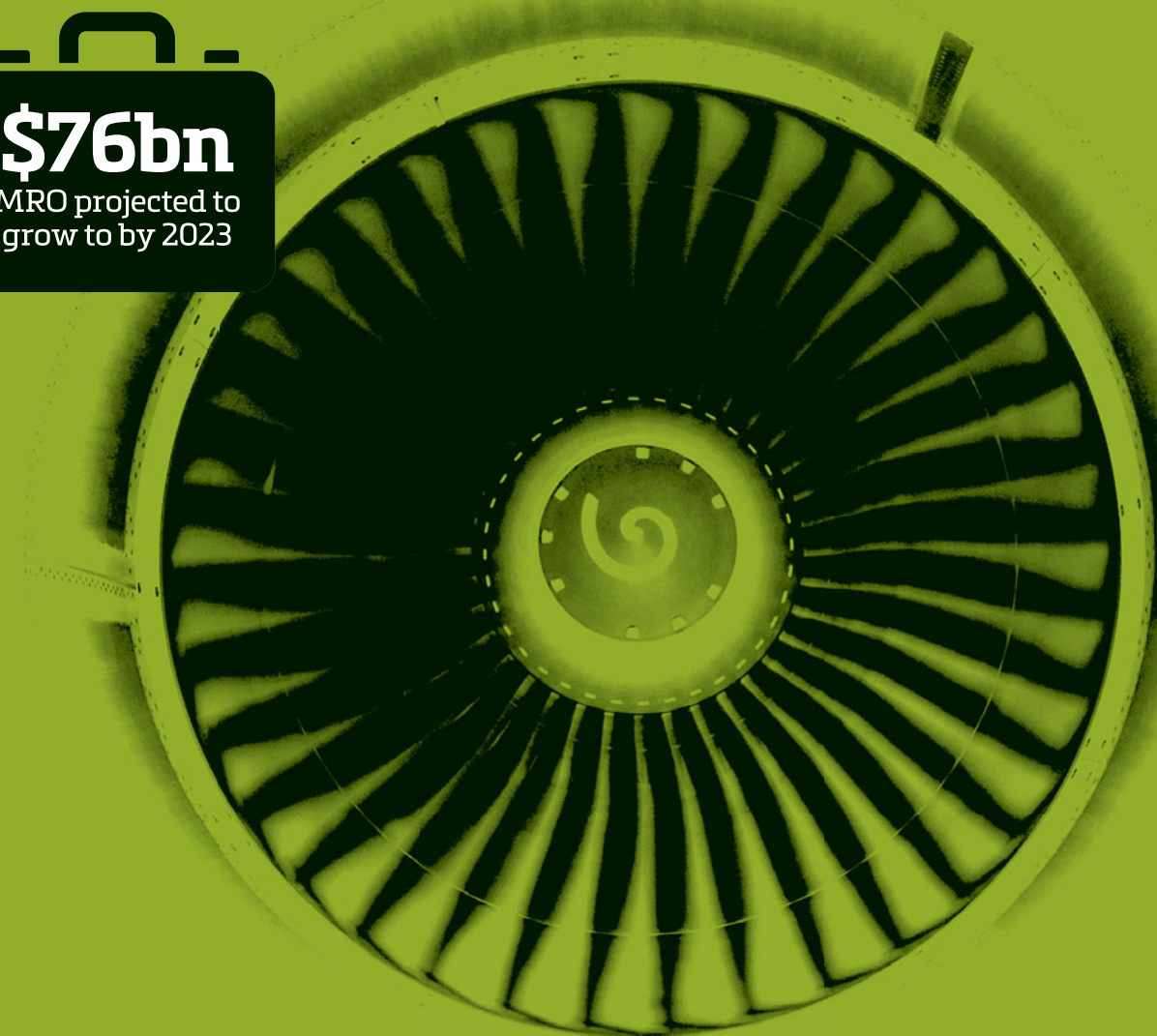
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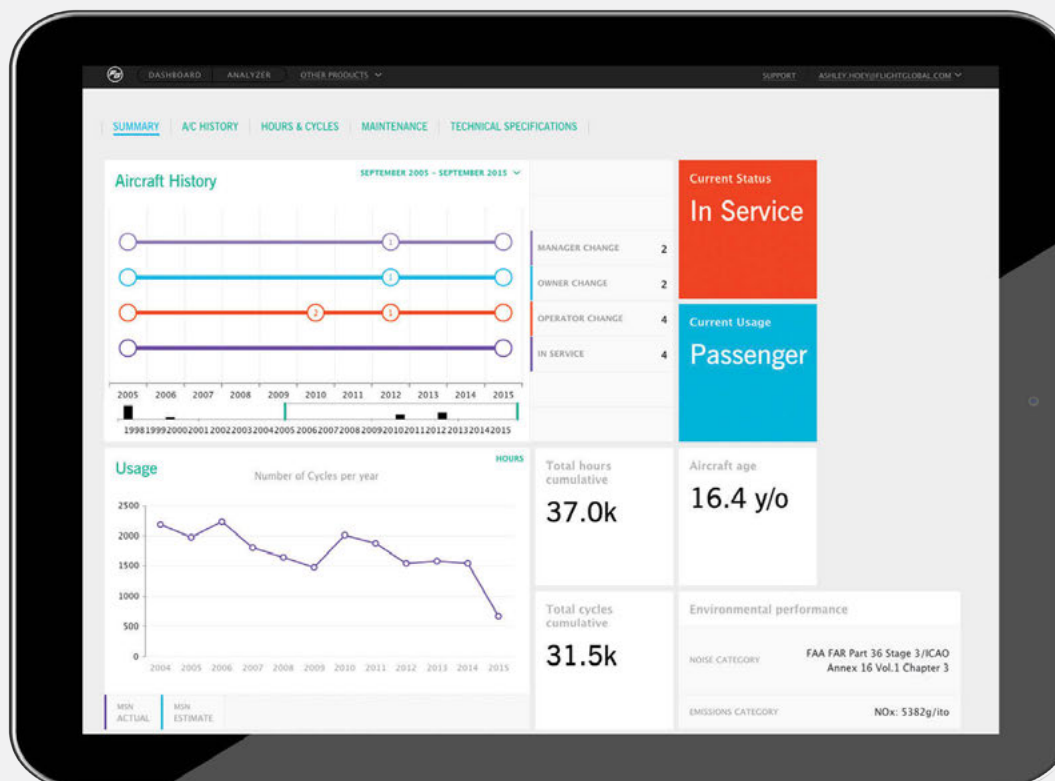


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Registered at the Post Office as a newspaper.
Published by Reed Business Information Ltd, Quadrant
House, The Quadrant, Sutton, Surrey SM2 5AS, UK.
Tel: +44 20 8652 3500.

Newstrade distributed by Marketforce (UK), 2nd Floor,
5 Churchill Place, Canary Wharf, London, E14 5HU, UK.
Tel: +44 20 3787 9001.

Classified advertising prepress by CCM.
Printed in Great Britain by William Gibbons and Sons Ltd.

Flight International published weekly 49 issues per year.
Periodicals postage paid at Rahway, NJ. Postmaster send
changes to Reed Business Information, c/o Mercury
International Ltd, 365 Blair Road, Avenel, NJ 07001

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ISSN 0015-3710 (Print) ISSN 2059-3864 (Online)

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bahraininternationalairshow.com

3-4 February 2016

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Dubai World Trade Centre, UAE
aime.aero/welcome-to-aime-2016

16-21 February 2016

Singapore Air Show
Changi Exhibition Centre, Singapore
singaporeairshow.com

17-19 February 2016

Routes Americas
Puerto Rico
routesonline.com/events/178/
routes-americas-2016

1-3 March 2016

Heli-Expo
Louisville, Kentucky, USA
heliexpo.rotor.org

6-8 March 2016

Routes Asia
Manila, Philippines
routesonline.com/events/180/
routes-asia-2016

8-9 March 2016

**Airline & Aerospace MRO & Operations
IT Conference - Americas**
Miami, USA
aircraft-commerce.com

15-17 March 2016

IATA World Cargo Symposium
Berlin, Germany
iata.org/events/wcs/pages/index.aspx

22-23 March 2016

Aerial Firefighting International
Sacramento, California, USA
tangentialink.com/event/aerial-
firefighting-international-2016

26 March - 3 April 2016

FIDAE
Santiago, Chile
fidae.cl/en

5-7 April 2016

Aircraft Interiors
Hamburg, Germany
aircraftinteriorsexpo.com

12-14 April 2016

ABACE
Shanghai, China
abace.aero

18-21 April 2016

Defence Services Asia
Kuala Lumpur, Malaysia
dsaexhibition.com

27-28 April 2016

Aircraft eEnablement & IFE Conference
London, UK
aircraft-commerce.com

2-5 May 2016

Xponential
New Orleans, USA
xponential.org

24-26 May 2016

EBACE
Geneva, Switzerland
ebace.aero

1-4 June 2016

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ila-berlin.com



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Inspiring a generation of students

First interested in flight as a child, James Pearson now heads a BSc aviation management course at Coventry University, equipping future cohorts of industry recruits with the skills needed in an increasingly airborne world

Tell us about your career to date

After managing youth hostels, I studied for a BSc in air transport management at Loughborough University. I worked for Airline Information; a US-based airline events and consultancy company, in sales and marketing. I then won full scholarships to do MSc air transport management at Cranfield University and then my PhD at Loughborough. I've now finished my PhD, entitled: *The competitive strength of Asian network airlines in competing with low-cost carriers and the use of low-cost subsidiaries*. I won Loughborough's most prestigious prize, the Sir Robert Martin University Prize. During my PhD I was an associate lecturer, and then senior lecturer at Buckinghamshire New University. In July 2015 I joined Coventry University as course director of BSc aviation management, and I manage SCOPE Hong Kong, a key Coventry partner, for BSc aviation management.

Why has the aviation industry held such a fascination for you?

I have been obsessed by the industry for more than 20 years – ever since my dad brought home huge OAG books that I'd endlessly flick through and wonder about. I love airlines as businesses, and I'm especially keen on strategy, the economics that underpin airlines and the metrics that result from everything they do, financial performance, and all commercial areas. It's hugely exciting.

This appears to have rubbed



Pearson won Loughborough's Sir Robert Martin prize during his PhD

off onto my five-year-old son!

Tell us about your current job

I'm course director of fast-growing BSc aviation management at Coventry University, a top-15 UK university. I lead and manage the organisation, delivery, and promotion of our course; the enhancement of the student experience and their satisfaction; and I'm responsible for all 185 undergraduate students. I'm also senior lecturer in airline strategy and applied economics, and I teach final-year BSc and MSc air transport management students.

What does a BSc aviation management course entail?

BSc aviation management is a specialised business degree that's about the running of airlines and airports. Our students cover many interactive industry mod-

ules, including airport operations and air transport; airline marketing and management; aviation finance and economics; aviation safety; security and emergency planning; and aviation strategy and planning. They also study a number of management modules to better understand the industry. Our interactive sessions are delivered by industry-experienced staff with a combined 70-plus years, and industry researchers into areas that matter. Renowned industry experts come and present.

What are the career prospects for someone with a BSc in aviation management?

Fantastic across the industry and world, as the number of passengers flown worldwide is forecast to double from 3.3 billion in

2014 to 7.3 billion in 2034; the number of appropriate jobs is huge. I passionately believe university degrees should be driven by highly relevant and graduate-appropriate employability. But as I always tell students, it's absolutely crucial to find as many ways to distinguish themselves as possible, including year-long industry placements or studying abroad, writing for industry magazines and blogs, attending conferences, organising events, industry part-time work, and properly networking. Anything that helps make them stand out for initiative and imagination.

What are the most rewarding aspects of your job?

I absolutely love open days because I love energetic and passionate presentations. When I'm teaching, students asking questions, engaging in discussions, drawing links between things is unbeatable. Ultimately, seeing students graduate with very good degrees, meaningful graduate-level jobs, and progressing quickly.

What are the challenges?

Many and varied! Enough to keep it interesting and at times frustrating. ■



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